FSA EA Network Repository and ED EA Repository Integration Strategy

Prepared by: _Manish Vij_ Date: _04/02/04_

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Introduction

System Architect

The Enterprise Architecture teams at FSA and the Department of Education have chosen System Architect as their tool for the purposes of Enterprise Architecture modeling. System Architect provides various capabilities in this area, and can be used to model and capture a range of architectural artifacts as a part of a central repository.

System Architect is comprised of a set of components that enable the capture, design, modeling, and creation of enterprise systems. All design information is stored in a multi-user repository called the Encyclopedia. An encyclopedia is created as a database in either SQL Server 2000 or using the Microsoft Server Desktop Engine (MSDE).

System Architect is based on the Zachman Framework, and its modeling support includes coverage of the IDEF methodology and links to third-party simulation tools. It also provides support of the standard modeling notations, with forward and reverse engineering of multiple languages. System Architect's data modeling capabilities include Entity Relation models with subject-areas, separate physical models, schema generation, and reverse data engineering.

System Architect (Continued)

Application of System Architect

System Architect will be used for different aspects of Enterprise Architecture Modeling within FSA and the Department of Education. This includes:

- Capturing information related to the FEAPMO reference models
- Business Process Modeling
- Relational Data Modeling
- Object and Component based Modeling
- Structured Analysis and Design

The information input and stored within System Architect can be used to generate output in the form of reports, using System Architect's Report Generator and VBA Macro capabilities. This information can thus be shared with different users within FSA and the Department of Education.

A number of modeling capabilities within System Architect are performed within a real-time, multi-user environment that is based on System Architect's repository, using a customizable meta-model.

Using System Architect in the Local Client Server Environment

The purpose of this section is to provide a user with the necessary guidelines to be able to launch and view the System Architect artifacts in the FSA EA Reference Model encyclopedia, which is currently residing in the FSA Local Client Server Environment and being managed by the Pearson-IBM team.

The user will have to take the following steps in order to view the artifacts in the FSA EA Reference Model Encyclopedia in the local client server environment:

Steps related to the Local System Architect Server:

1. Boot up the Local Server Machine (i.e., ED332486, residing in cube 94D2).

2. Go to **Start, Programs, Popkin Software, License Manager**.

3. The License Manager window will launch:

```
License Manager                                           _ □ ×
File   Multi-User   Tools   Help

Registered serial number: M1087608
Multi-user common path is \\WDCUCPFPR02\GROUPS\SHARED\POPKIN SOFTWARE\COMMONPATH\
No key block required
Maximum of 2 users may access this 2-user license
```
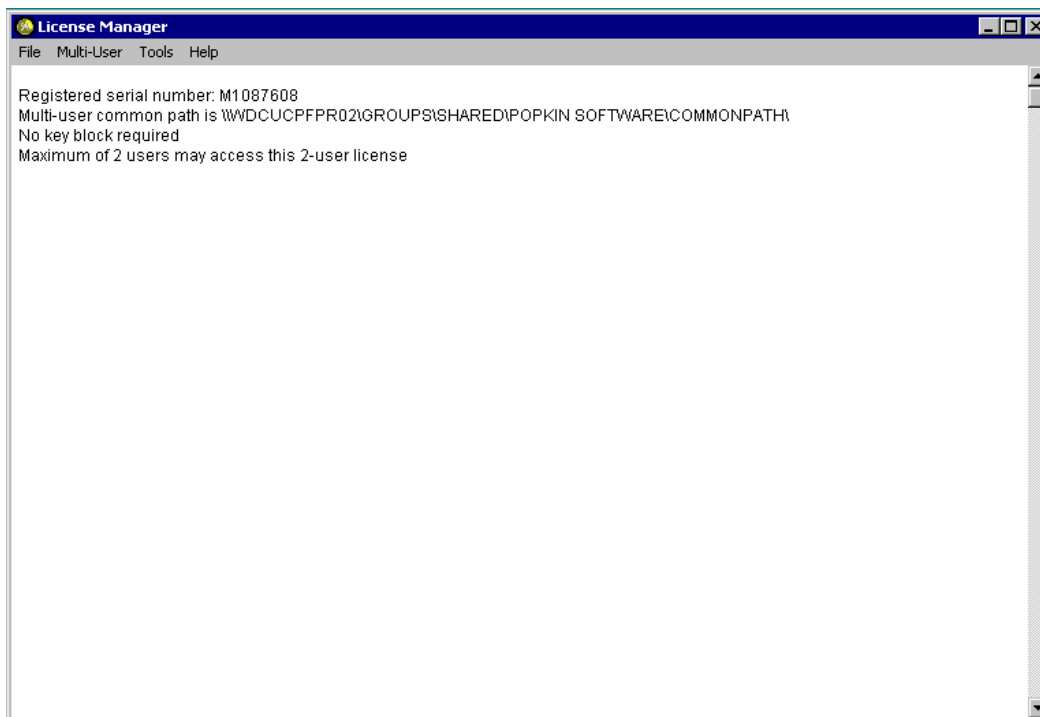
Steps related to the Local System Architect Client:

1. Boot up the Local Client Machine (i.e., ED337023, residing in cube 94E1).

2. Go to **Start, Programs, Popkin Software, System Architect.**

3. The following **Open Project** dialog box will open.
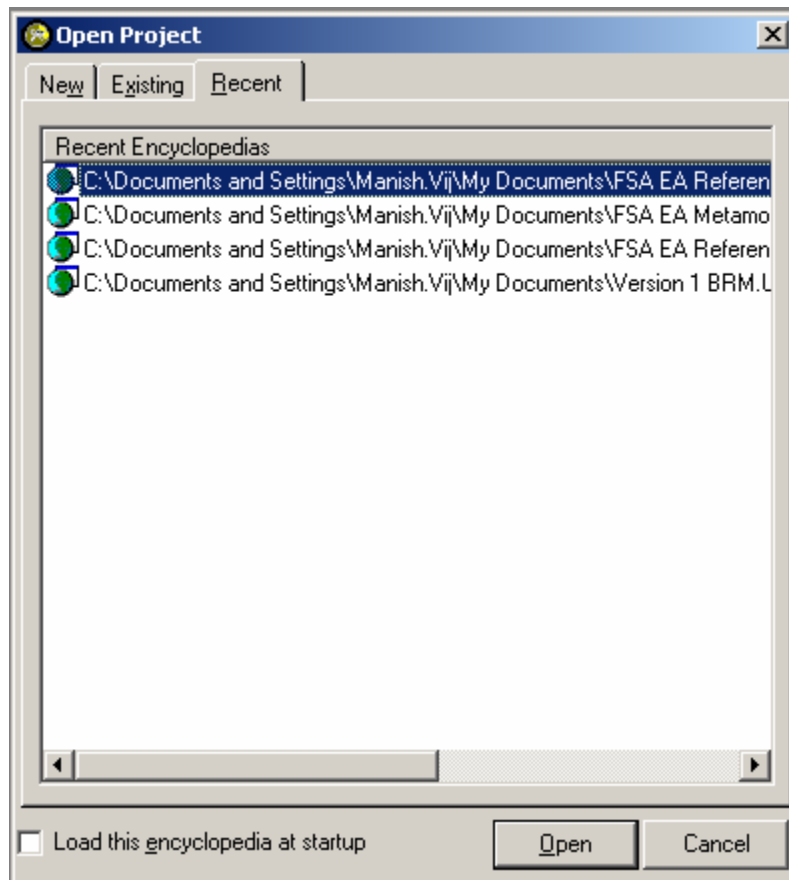
4. Select **C:\Documents and Settings\Manish.Vij\My Documents\FSA EA Reference Model.UDL** and click **Open**.

5. This will launch the FSA EA Reference Model encyclopedia, which has the Reference Model artifacts for the FY05 submissions. (See the example on the next page.)

Steps related to the Local System Architect Client (Continued)
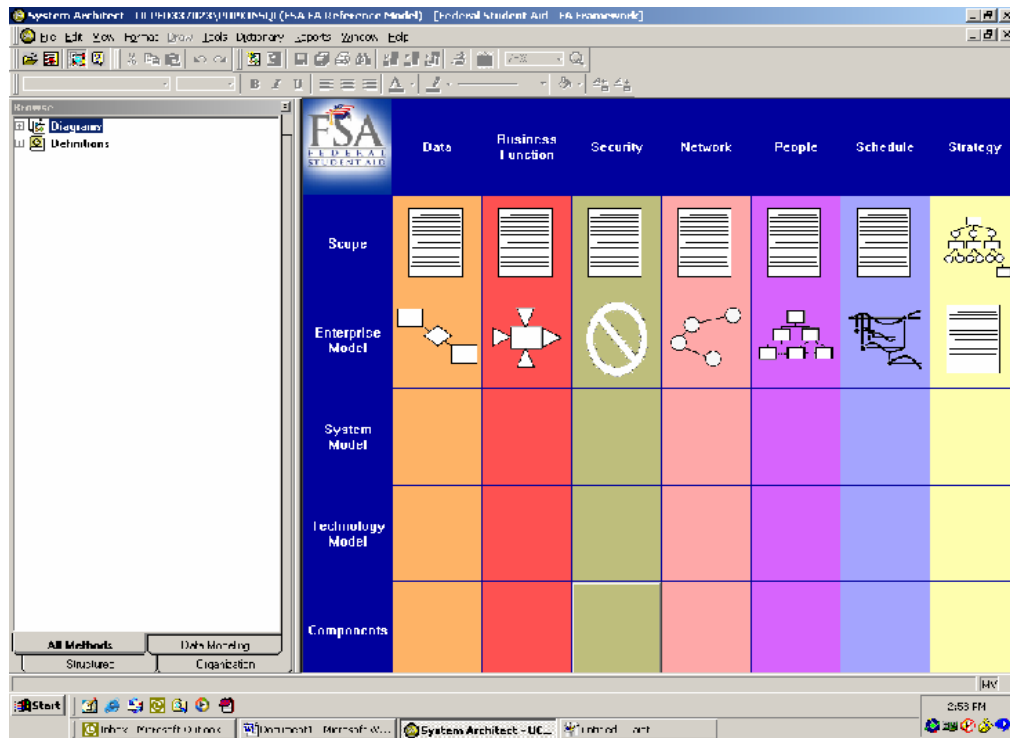
6. The user can expand on Diagrams (located on the left-hand side of the encyclopedia – see the example above) and view the different artifacts in the encyclopedia by double-clicking on that artifact.

Steps related to the Local System Architect Client (Continued)

7. The user can expand on Definitions to view the properties of the different Definitions in the encyclopedia by double-clicking on them.
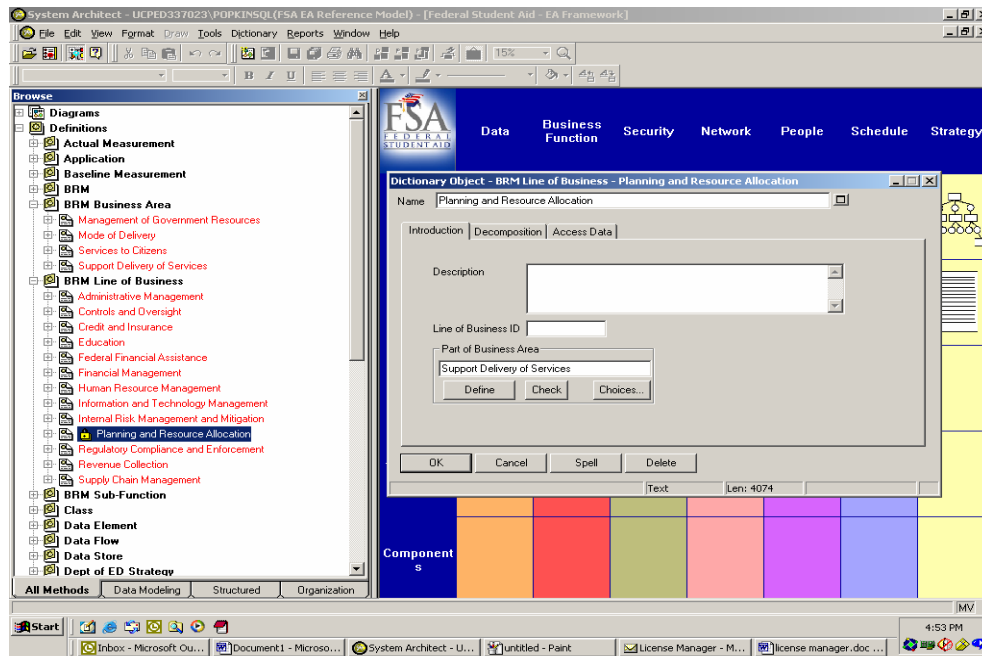
Common Popkin Functionality

Buttons	Usage
Define	The Define button is used within Popkin to enable the user to provide a new definition for a particular field value, in case it is not already defined before. This serves like a shortcut for the user, as opposed to going through the Definitions option in the Tool Browser.
Check	The Check button is used within Popkin to enable the user to check for the validity of the value entered in a particular field in Popkin.
Choices	The Choices button is used within Popkin to enable the user to pick out a particular value for a field from a list of pre-existing values for that particular field.

PRM Hierarchy *(as implemented in Popkin)*
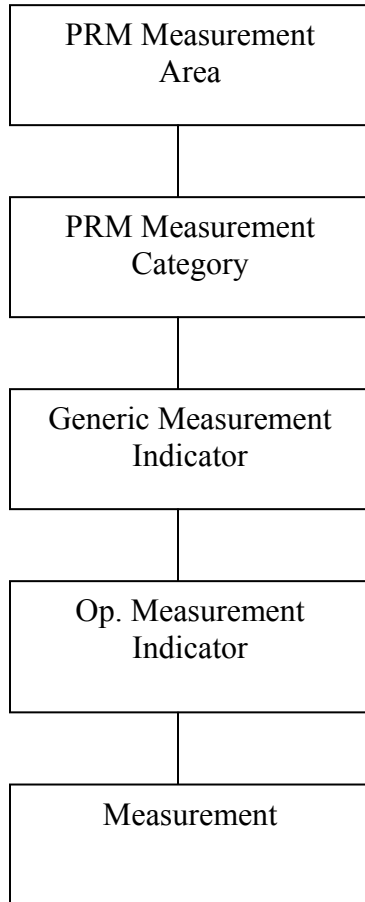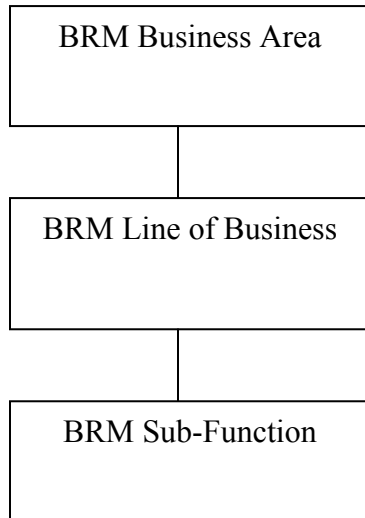
```
┌─────────────────────┐
│  PRM Measurement    │
│       Area          │
└─────────────────────┘
           │
┌─────────────────────┐
│  PRM Measurement    │
│     Category        │
└─────────────────────┘
           │
┌─────────────────────┐
│ Generic Measurement │
│     Indicator       │
└─────────────────────┘
           │
┌─────────────────────┐
│  Op. Measurement    │
│     Indicator       │
└─────────────────────┘
           │
┌─────────────────────┐
│    Measurement      │
│                     │
└─────────────────────┘
```

BRM Hierarchy *(as implemented in Popkin)*

```
┌─────────────────────────┐
│    BRM Business Area     │
│                         │
└───────────┬─────────────┘
            │
┌───────────┴─────────────┐
│   BRM Line of Business   │
│                         │
└───────────┬─────────────┘
            │
┌───────────┴─────────────┐
│    BRM Sub-Function      │
│                         │
└─────────────────────────┘
```

SRM Hierarchy *(as implemented in Popkin)*

```
┌─────────────────────────┐
│   SRM Service Domain     │
│                         │
└───────────┬─────────────┘
            │
┌───────────┴─────────────┐
│    SRM Service Type      │
│                         │
└───────────┬─────────────┘
            │
┌───────────┴─────────────┐
│      SRM Service         │
│       Component          │
└─────────────────────────┘
```

TRM Hierarchy *(as implemented in Popkin)*
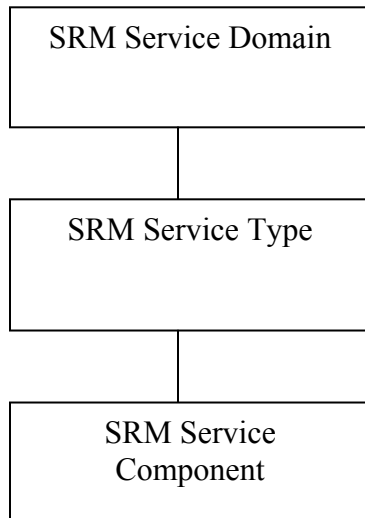
```
┌─────────────────────────┐
│                         │
│    TRM Service Area      │
│                         │
└────────────┬────────────┘
             │
┌────────────┴────────────┐
│                         │
│   TRM Service Category   │
│                         │
└────────────┬────────────┘
             │
┌────────────┴────────────┐
│                         │
│   TRM Service Standard   │
│                         │
└────────────┬────────────┘
             │
┌────────────┴────────────┐
│      TRM Service         │
│      Specification       │
│                         │
└─────────────────────────┘
```
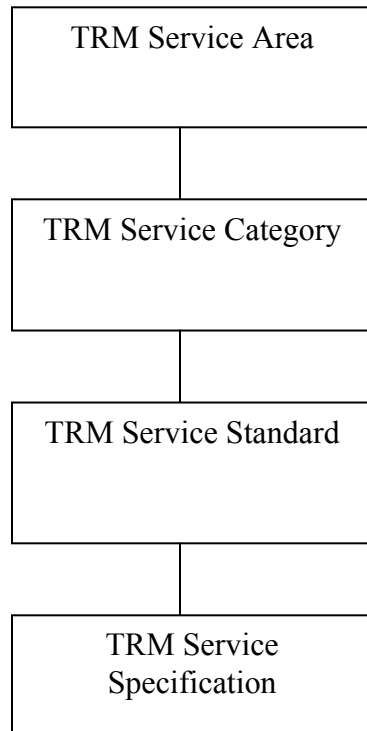
Data Entry Procedures for Popkin

Introduction

The following section describes the steps that an FSA user can follow to enter CPIC related information into Popkin. This includes the data entry procedures for each reference model, i.e., PRM, BRM, SRM, and TRM.
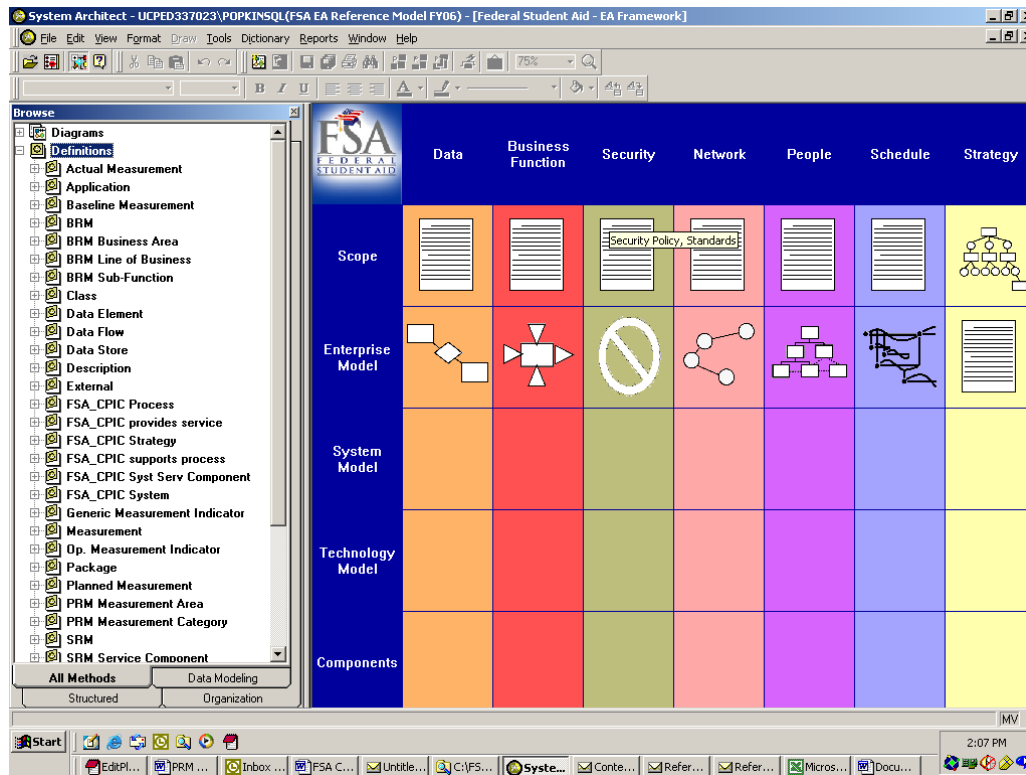
Data Entry for PRM

The Measurement Definition is now the key PRM data input dialogue. The properties of this definition are used to input the measurement data and link it to the appropriate Initiative/System.

Key PRM Data Input Steps:

1. Open the FSA EA Reference Model encyclopedia.

2. Expand the **Definitions** folder in the left side of the browser.

Data Entry for PRM (Continued)

3. Right-click on the Measurements definition, and click **New**.

4. This will open a dialog box for the user to create a new Measurement.

Data Entry for PRM (Continued)
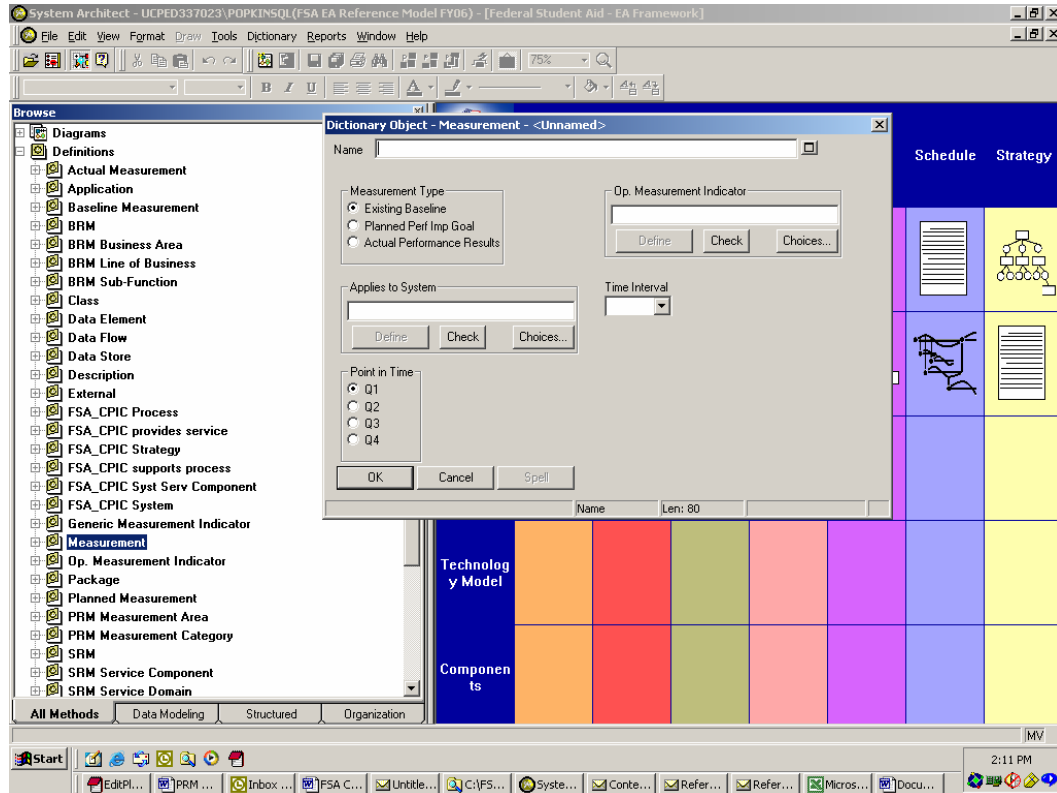
5. Enter the Name of the Measurement. Examples of Measurement Indicators are as follows:

   - Number of GAs reporting more than monthly
   - Cost per Student decreases

6. Select the Measurement Type by selecting the appropriate Radio Button option:

   - Existing Baseline
   - Planned Perf Imp goal
   - Actual Performance Results

Data Entry for PRM (Continued)

In the Op. Measurement Indicator (OMI) field, in case this is not the first instance of using that OMI, the user must click on the **Choices** button and select that OMI from the list. In case it is the first instance of using that OMI, the user will have to enter the OMI value in this field, and click on **Define.** The dialog box (shown below) will open, and the user will follow the following steps to complete the necessary information:

- Enter the OPI in the "OP. Measurement Indicator" field in the following dialog box.

Data Entry for PRM (Continued)

- Click on the **Define** button. The following dialog box will open. Select the "OMI Full Name" tab, and enter the complete value of the OMI field. (In the OMI Full Name field, the full value of the OMI can be entered because the Name field can only accept a maximum of 70 characters. The value in the OMI Full Name field is the value that is printed in the reports, through Popkin.)

- Now select the "Generic Measurement Indicator" tab.

Data Entry for PRM (Continued)

- In the Generic Measurement Indicator (GMI) field, in case this is not the first instance of using that GMI, the user must click on the **Choices** button and select that GMI from the list. In case it is the first instance of using that GMI, the user will have to enter the GMI value in this field, and click on **Define**. The dialog box (shown below) will open, and the user will follow the following steps to complete the necessary information:

Data Entry for PRM (Continued)

- Select the **Measurement Category** tab.

- In the "Part of PRM Measurement Category" field, in case this is not the first instance of using that GMI, the user must click on the **Choices** button and select that Measurement Category from the list. In case it is the first instance of using that Measurement Category, the user will have to enter the Measurement Category value in this field, and click on **Define**. The dialog box (shown below) will open, and the user will follow the steps (below this dialog box) to complete the necessary information:

Data Entry for PRM (Continued)

- Select the Measurement Area Tab.

Data Entry for PRM (Continued)

- In the "Part of PRM Measurement Area" field, in case this is not the first instance of using that Measurement Area, the user must click on the **Choices** button and select that Measurement Area from the list. In case it is the first instance of using that Measurement Area, the user will have to enter the Measurement Area value in this field, and click on Define. The following dialog box will open:

- Click on the **OK** button. This will take the user back to the PRM Measurement Category Screen.

Data Entry for PRM (Continued)

- Click on the **OK** button. This will take the user back to the Generic Measurement Indicator Screen.

- Click on the **OK** button. This will take the user back to the "Op. Measurement Indicator Screen".

Data Entry for PRM (Continued)

- Click on the **OK** button. This will take the user back to the "Measurement Screen".

Data Entry for PRM (Continued)

7. In the "Applies to System" field, in case this is not the first instance of using that System, the user must click on the **Choices** button and select that System from the list. In case it is the first instance of using that System, the user will have to enter the System value in this field, and click on Define. The following dialog box will open:

- Click on the **OK** button. This will create the new System and bring the User back to the Measurement Screen.

Data Entry for PRM (Continued)

8. Select the appropriate value from the Time Interval combo box. In case you want to select an year that is not an option in the combo box e.g. FY09, this would require updating the USRPROPS.txt file, and modifying the possible values for the list variable representing the Time Interval combo box. Please refer to the Popkin Customization Manual for more instructions on USRPROPS.txt modification.

Data Entry for PRM (Continued)

9. Select the appropriate value in the Point in Time radio button. If the Measurement Type selected is "Existing Baseline", please select the Q1 radio button. If "Planned Perf Imp Goal" or "Actual Performance Results" are selected as the Measurement Type, please select the Q4 radio button.

10. Click on the **OK** button to close Measurement dialog box.

11. The data entry of this Measurement is now complete, and the user can repeat these steps to add more Measurements to the repository.

Data Entry for PRM (Continued)

12. The PRM information that is fed into System Architect can be generated from the tool for reporting purposes. Below is an example of such a PRM table.

I.C. Performance Goals and Measures (All Assets) - Table 2						
Fiscal Year	**Measurement Area**	**Measurement Category**	**Measurement Indicator**	**Baseline**	**Planned Improvements to the Baseline**	**Actual Results**
FY 2004	Processes and Activities	Productivity and Efficiency	Efficiency	General Manager survey average score is 3 out of 5 possible points	Improvement by .01% for General Manager survey.	N/A
FY 2004	Mission and Business Results	Controls and Oversight	Program Monitoring	Service Level Agreements - Priority 1 systems 99.9% uptime availability - Priority 2 systems 99.7% uptime availability.	.01% improvement to priority 1 and 2 systems.	N/A
FY 2004	Customer Results	Customer Benefit	Customer Complaints	Customer satisfaction survey. 3.2 is average score out of 5 possible points.	.01% improvement above the baseline 3.2.	N/A

Table 1 – Sample PRM Table

Data Entry for BRM

Key BRM Data Input Steps:

1. Open the FSA EA Reference Model encyclopedia.

2. Expand the Diagrams folder in the left-side of the browser.
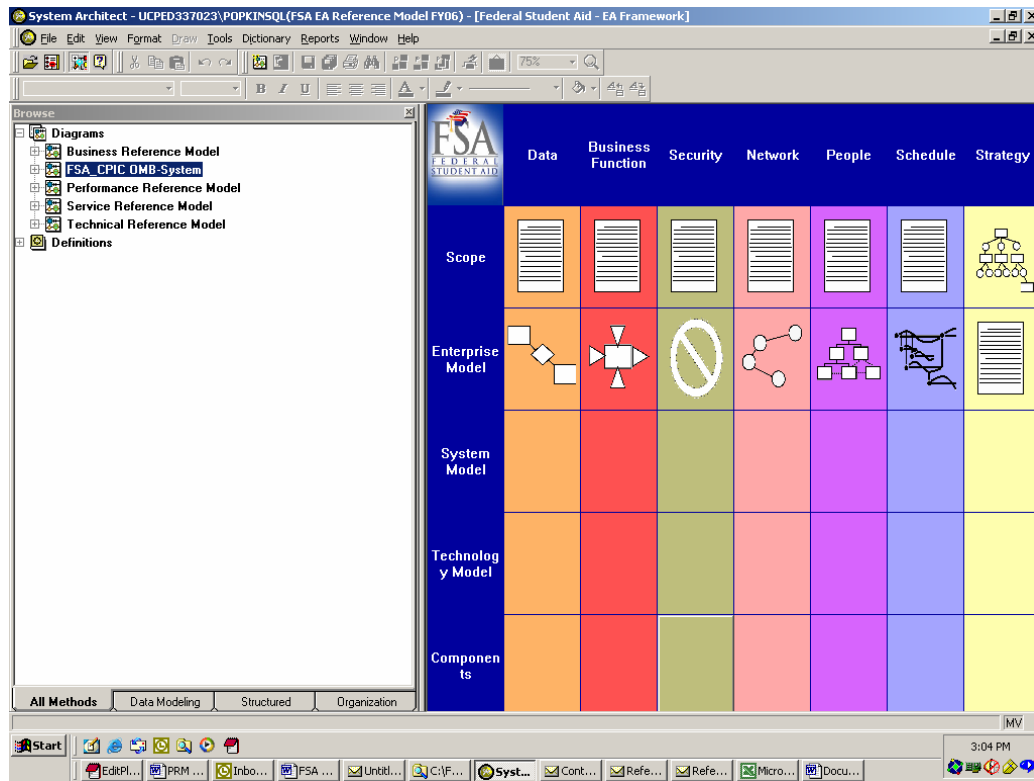
3. If the System (for which the BRM is being entered) already exists, go straight to Step 7. In case of defining a brand new system, right-click on the FSA_CPIC OMB-System Diagram type and click **New**. The following dialog box opens.

4. Enter the name of the new FSA_CPIC OMB-System diagram, and click **OK**.

Data Entry for BRM (Continued)

5. Click on the FSA_CPIC System from the Symbols Bar and create this symbol on the diagram by dragging this Symbol from the toolbar and clicking on the Diagram Area. The user may rename the Symbol, as necessary.

6. Double click on this FSA_CPIC System symbol. This will launch the following dialog box:

Data Entry for BRM (Continued)

7. Click on the BRM Sub-Function tab.

Data Entry for BRM (Continued)

- Enter the value of the Primary Sub-Function in the BRM Primary Sub-Function field, using the Choices button. If defining a new BRM Primary Sub-Function, enter its value and click on **Define** to enter the properties of this new Sub-Function, which will open a dialog box (see the next page).

Data Entry for BRM (Continued)

- Enter the appropriate 3 digit numeric value in the Sub-Function ID field

- Enter the value of the corresponding Line of Business in the "Owning Line of Business" field, using the Choices button. If defining a new Owning Line of Business, enter its value and click on **Define** to enter the properties of this new Line of Business, which will open the following dialog box.

Data Entry for BRM (Continued)

- Enter the appropriate 2 digit numeric value in the Line of Business ID field

- Enter the value of the corresponding Business Area in the "Part of Business Area" field, using the Choices button. If defining a new Business Area, enter its value and click on **Define** to enter the properties of this new Business Area, which will open the following dialog box.

Data Entry for BRM (Continued)

- Enter the appropriate 1 digit numeric value in the Business Area ID field.

Data Entry for BRM (Continued)

- Go to Page 2 of 2 on the Introduction Tab. The following Window will open.

- Click on the **Choices** button and select BRM in the "Belongs to Reference Model" field.

Data Entry for BRM (Continued)
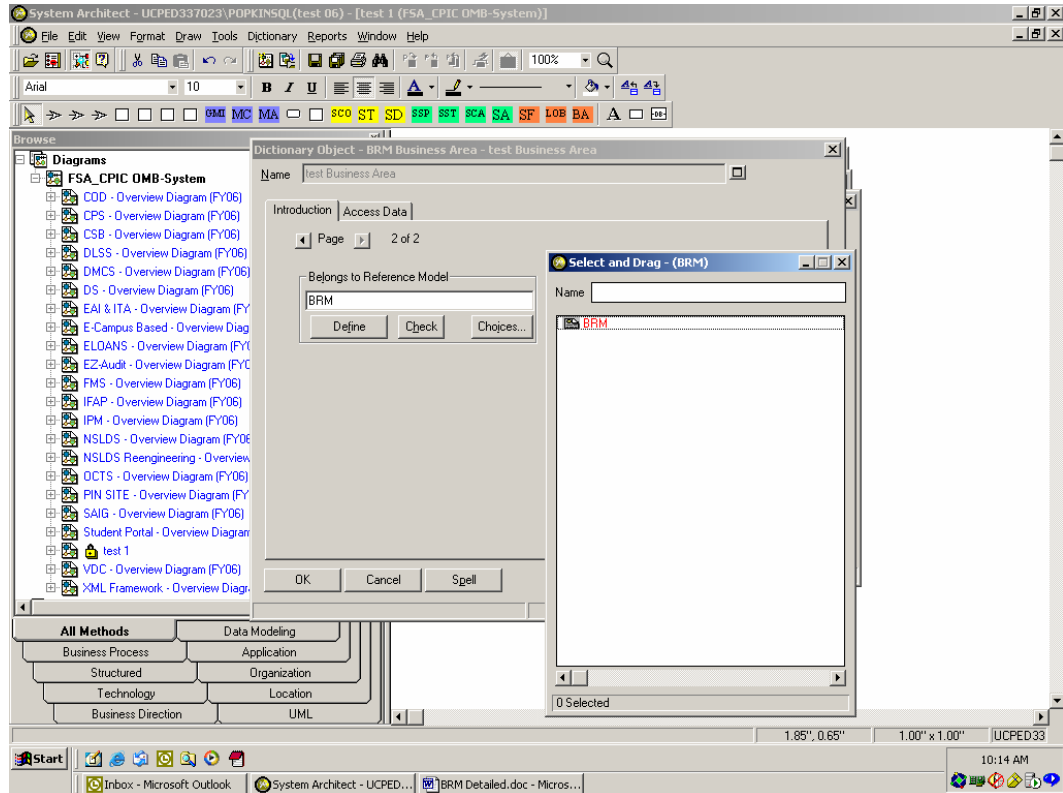
- Now click on the **OK** button on the BRM Business Area screen. This will bring the user back to the BRM Line of Business Screen.
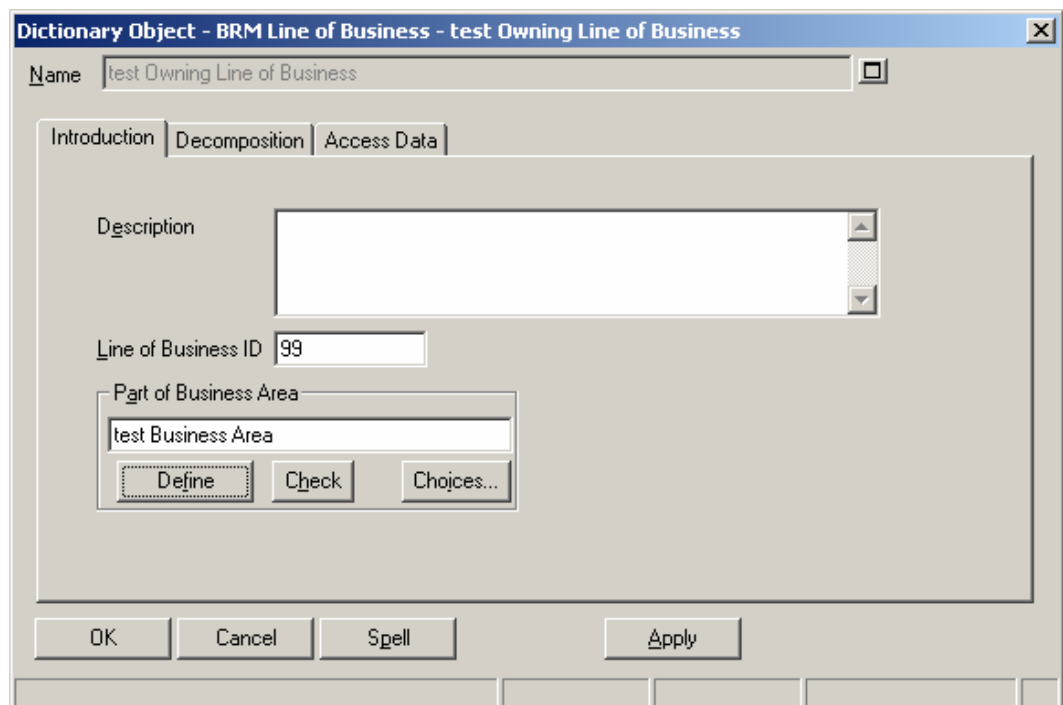
Data Entry for BRM (Continued)

- Now click on the **OK** button on the BRM Line of Business screen. This will bring the user back to BRM Sub-Function screen.

- Now click on the **OK** button of the BRM Sub-Function screen. This will bring the user back to the following screen.

Data Entry for BRM (Continued)

- The BRM Primary Sub-Function field is now populated with the newly defined BRM Primary Sub-Function.

8. Use the Choices button to add all the BRM Sub-Functions related with that application, in the BRM Sub-Function list field. In case that the user needs to define new BRM Sub-Functions, he/she needs to repeat Step 7 for each new BRM Sub-Function that is defined.

9. Click **OK**. The BRM data entry for this System is now complete.
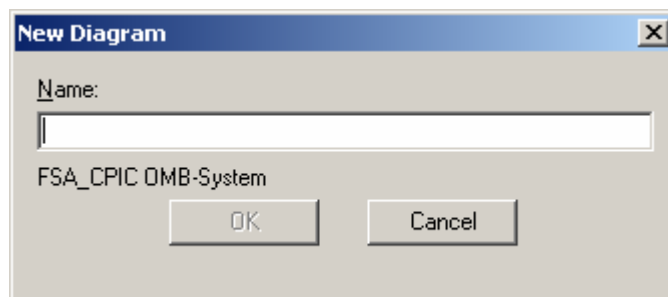
Data Entry for SRM

Key SRM Data Input Steps:

1. Open the FSA EA Reference Model encyclopedia.

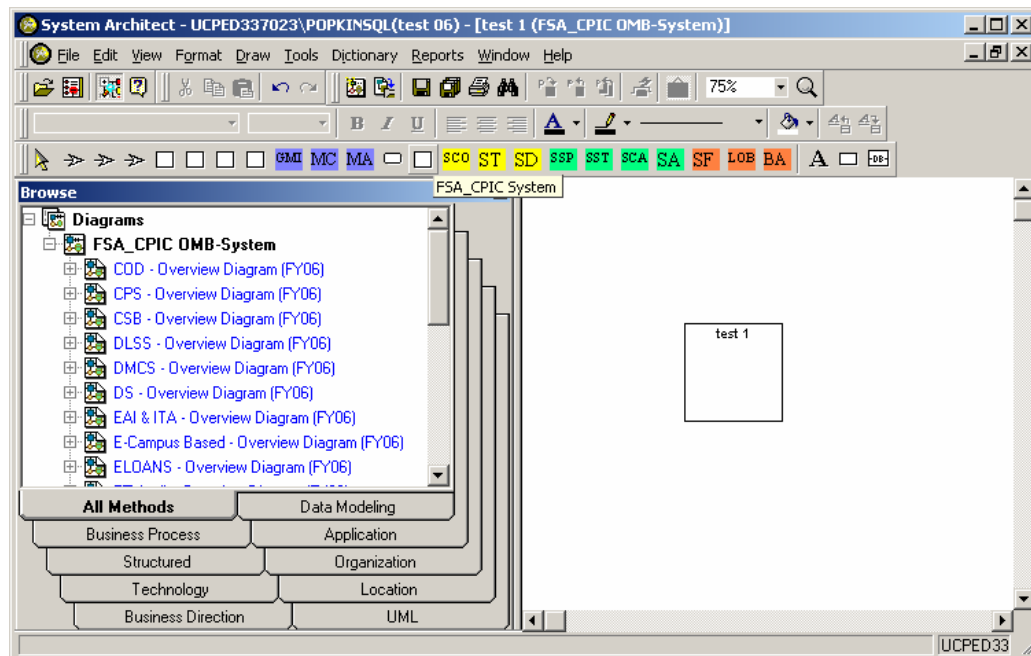2. Expand the Diagrams folder in the left-side of the browser.
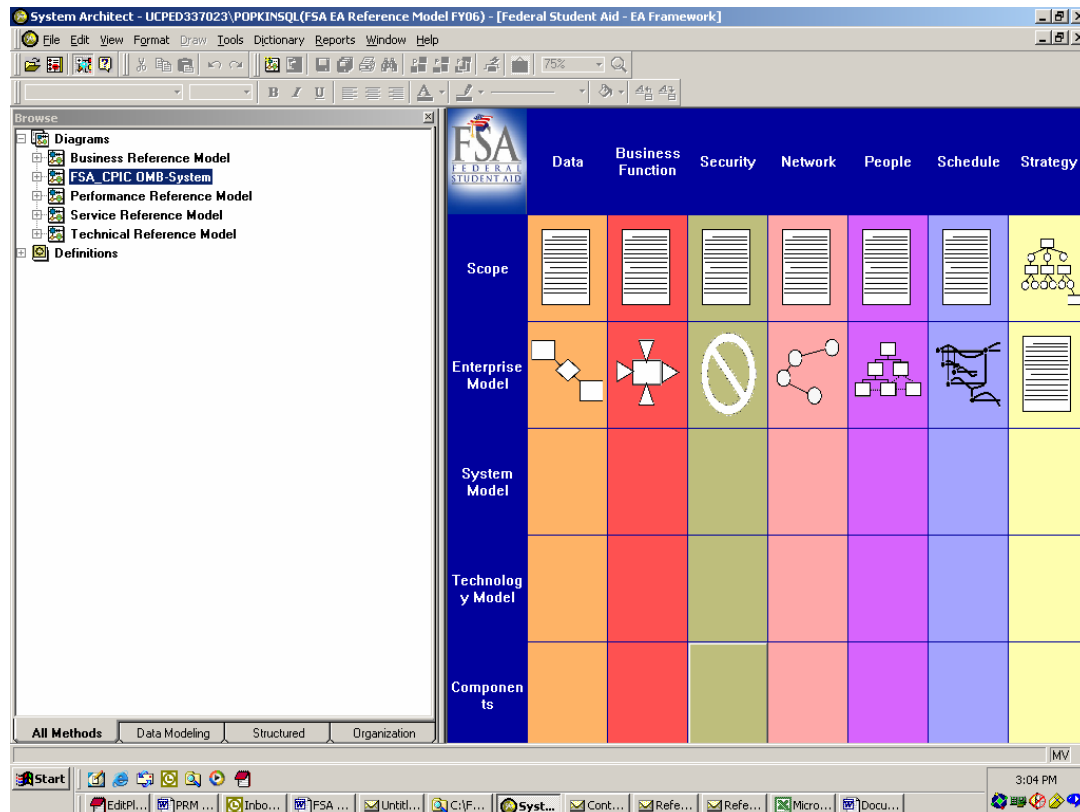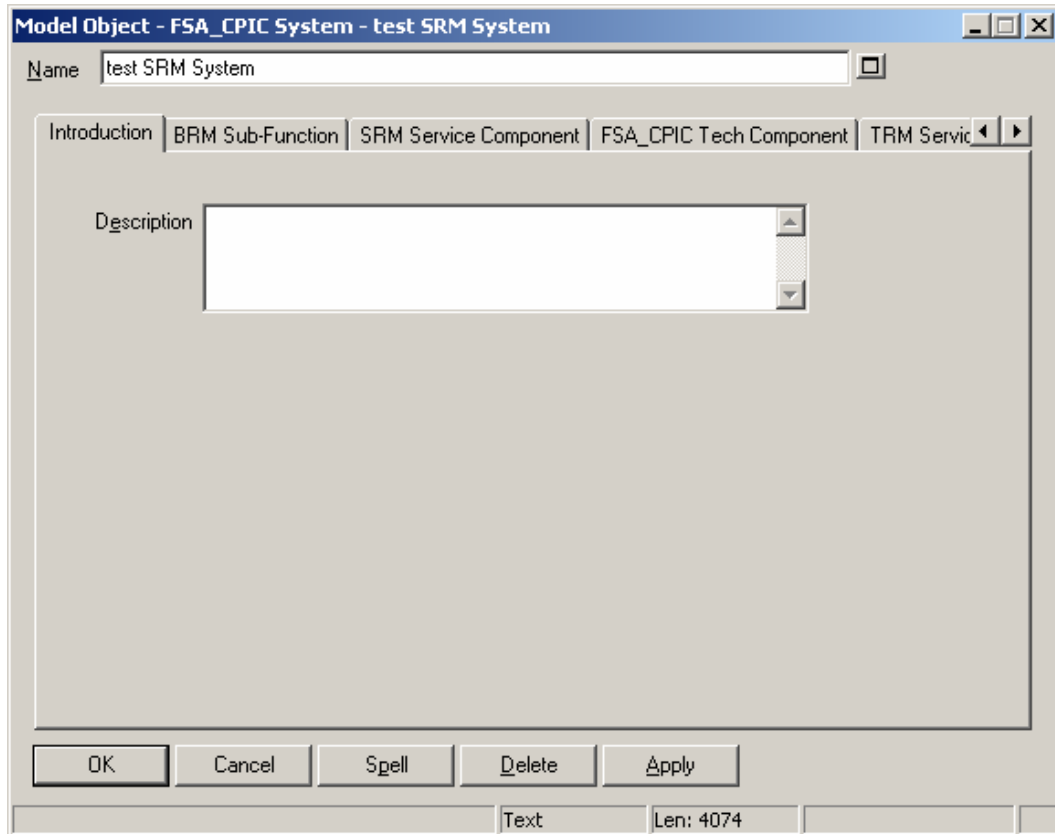
3. If the System (for which the SRM is being entered) already exists, go straight to Step 7. In case of defining a brand new system, right-click on the FSA_CPIC OMB-System Diagram Type and click on **New**. The following dialog box opens.
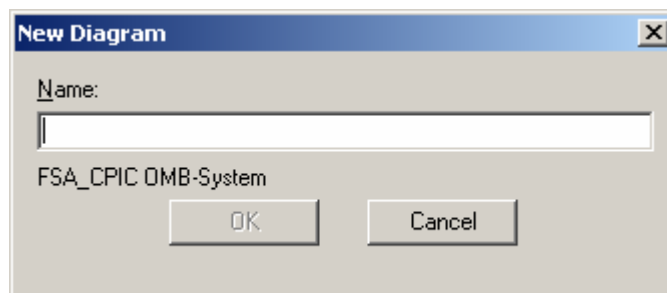
Data Entry for SRM (Continued)

4. Enter the name of the new FSA_CPIC OMB-System diagram, and click **OK**.

5. Click the FSA_CPIC System from the Symbols Bar and create this symbol on the diagram.

6. Double click this FSA_CPIC System symbol. This will launch the following dialog box:

7. Click on the SRM Service Component tab.

Data Entry for SRM (Continued)

8. Use the **Choices** button to add all the SRM System Components related with that application. If defining a new SRM System Component, enter its value, click on **Add,** and then click on **Define.** This will open the following dialog box, which can be used to enter the properties of this new SRM System Component.

Data Entry for SRM (Continued)

a. Enter the description for this new SRM System Component in the Description field.

b. In the New SRM Service Component field, select the No or Yes radio button, depending on whether this is a new SRM Service Component or not.

c. Use the **Choices** button to add the Parent Service Type related to that application. If defining a new Parent Service Type, enter its value, and click on **Define.**   This will open the following dialog box, which can be used to enter the properties of this new Parent Service Type.

Data Entry for SRM (Continued)

d.   Enter the description for the SRM Service Type in the Description field.

e.   Use the **Choices** button to add the Parent Service Domain related to that application. If defining a new Parent Service Domain, enter its value, and click on **Define.**   This will open the following dialog box, which can be used to enter the properties of this new Parent Service Domain.

Data Entry for SRM (Continued)

- Enter the description for the Parent Service Domain in the Description field.

- Now click on the **Service Types** tab.

Data Entry for SRM (Continued)

- Use the **Choices** button to select SRM as the value in the "Belongs to Reference Model" field.

Data Entry for SRM (Continued)
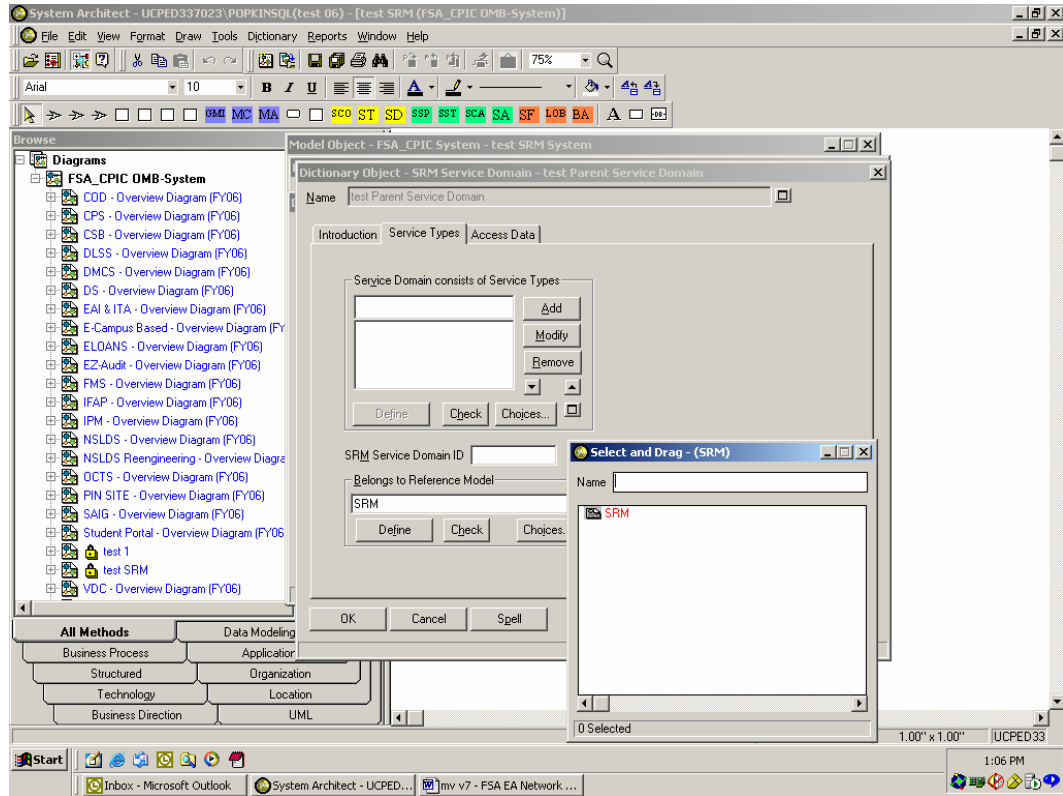
- Now click **OK**. This will take the user back to the SRM Service Type screen.

Data Entry for SRM (Continued)

- Click **OK**. This will take the user back to the SRM Service Component Screen.

Data Entry for SRM (Continued)

- Click **OK**. This will take the user back to the following screen.

- Repeat Step 8 for adding any other SRM System Components

9. Click **OK**. The SRM data entry for this System is now complete.

Data Entry for TRM

Key TRM Data Input Steps:

1. Open the FSA EA Reference Model encyclopedia.

2. Expand the Diagrams folder in the left-side of the browser.
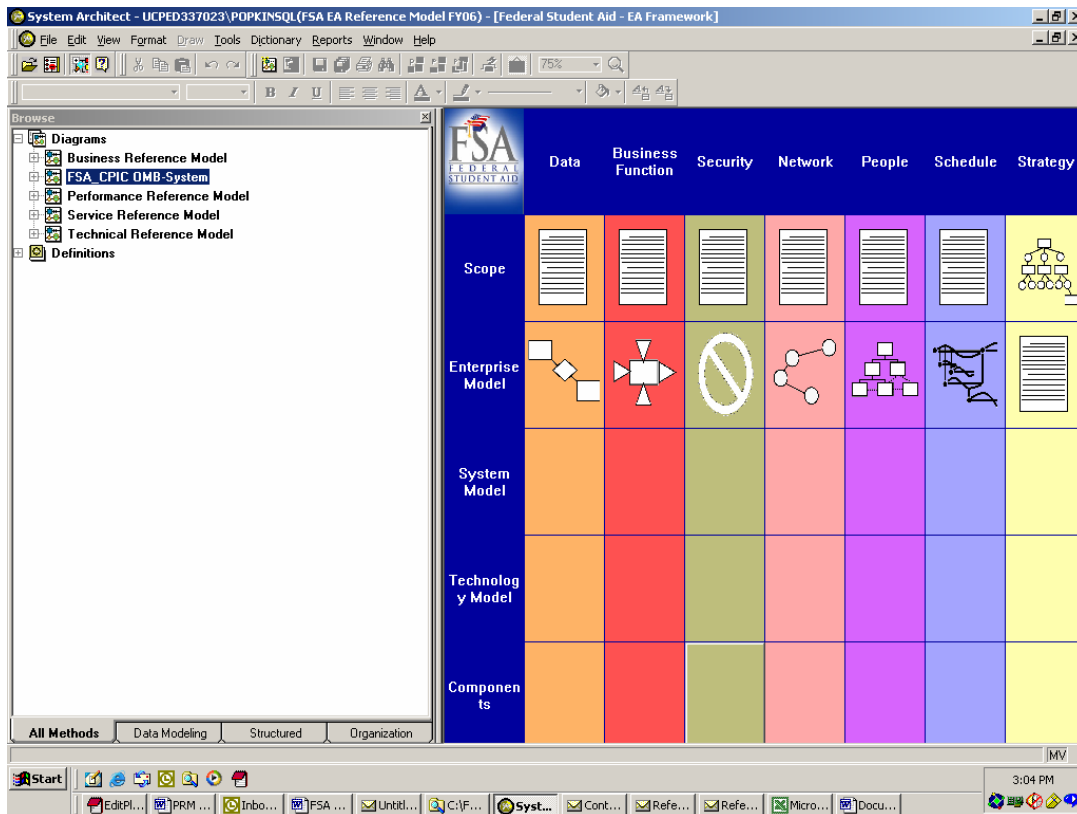
3. If the System (for which the TRM is being entered) already exists, go straight to Step 7. In case of defining a brand new system, right-click the FSA_CPIC OMB-System Diagram Type and click **New**. The following dialog box opens.
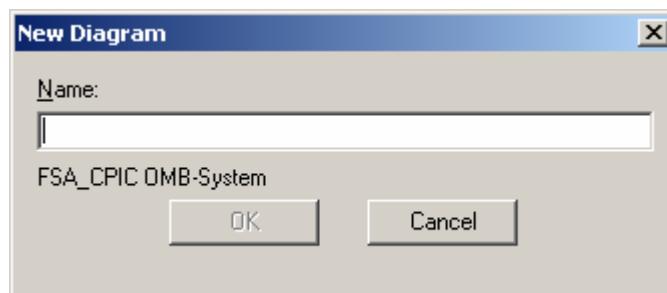
Data Entry for TRM (Continued)

4. Enter the name of the new FSA_CPIC OMB-System diagram, and click **OK**.

5. Click on the **FSA_CPIC System** from the Symbols Bar and create this symbol on the diagram.

6. Double-click on this FSA_CPIC System symbol. This will launch the following dialog box:
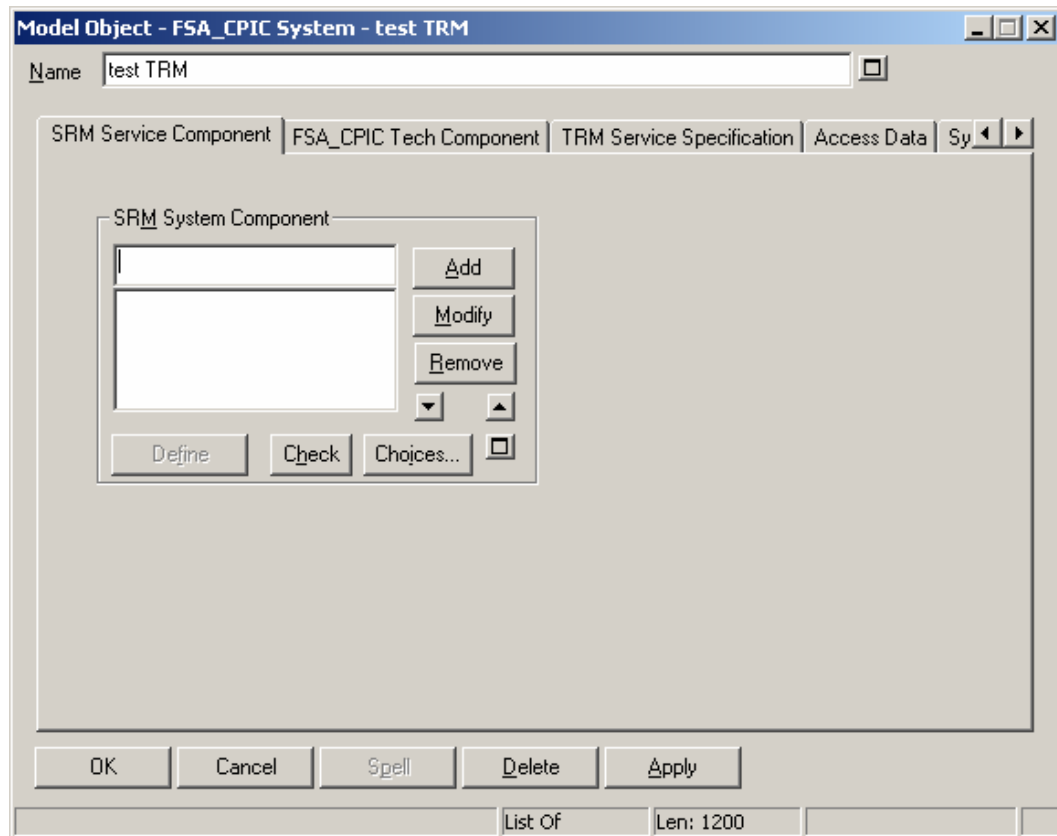
7. Click on the TRM Service Specification tab.

Data Entry for TRM (Continued)

8. Use the Choices button to add all the TRM Service Specifications related with that application. If defining a new TRM Service Specification, enter its value, click on **Add,** and then click on **Define.**   The dialog box (found on the next page) will open, which can be used to enter the properties of the new TRM Service Specification.

Data Entry for TRM (Continued)

a. Enter the description of the new TRM Service Specification in the Description field.

b. Select the Yes or No radio button depending of whether this is a new TRM Service Specification.

c. Use the Choices button to add the Service Specification Parent. If defining a new Service Specification Parent, enter its value, and then click on **Define.** The following dialog box will open which can be used to enter the properties of the new Service Specification Parent.

Data Entry for TRM (Continued)

- Fill out the description of the Service Specification Parent in the Description field.

- Select the No or Yes radio button based on whether this is a new Service Standard.

- Now click on the Service Specifications tab. The dialog box (found on the next page) will appear.

Data Entry for TRM (Continued)

- Use the Choices button to add the Parent Service Category. If defining a new Parent Service Category, enter its value, and then click on **Define.** The following dialog box will open which can be used to enter the properties of the new Parent Service Category.

Data Entry for TRM (Continued)

- Enter the description in the Description field for the Parent Service Category.

- Now select the Service Standards tab.

Data Entry for TRM (Continued)

- Use the Choices button to add the Parent Service Area. If defining a new Parent Service Area, enter its value, and then click on **Define.** The following dialog box will open which can be used to enter the properties of the new Parent Service Area.

- Enter the description in the Description field for the Parent Service Area.

Data Entry for TRM (Continued)

- Now click the **OK** button. This should take the user back to the TRM Service Category screen.

- Click **OK.**. This should take the user back to the TRM Service Standard screen.

Data Entry for TRM (Continued)

- Click **OK**. This will take the user back to the TRM Service Specification field.

Data Entry for TRM (Continued)

- Click **OK**. This will take the user back to the following screen.

- Repeat Step 8 for adding any other TRM Service Specifications.

9. Click **OK**. The TRM data entry for this System is now complete.

Accessing FEAPMO Reference Model Reports from Popkin Repository

Introduction

The following section describes the steps that an FSA user can follow to access FEAPMO Reference Model Reports from the Popkin Repository. This includes the steps for launching the VBA Macro reports created for accessing the data for the PRM, BRM, SRM, and TRM reference models.

Steps for Report Access

1. Open the FSA EA Reference Model Encyclopedia.

2. Go to Reports, Dept of Ed Reports from the Tools menu.

3. Now select the corresponding option to run a PRM, BRM, SRM or TRM Report.

Accessing FEAPMO Reference Model Reports from Popkin Repository (Continued)
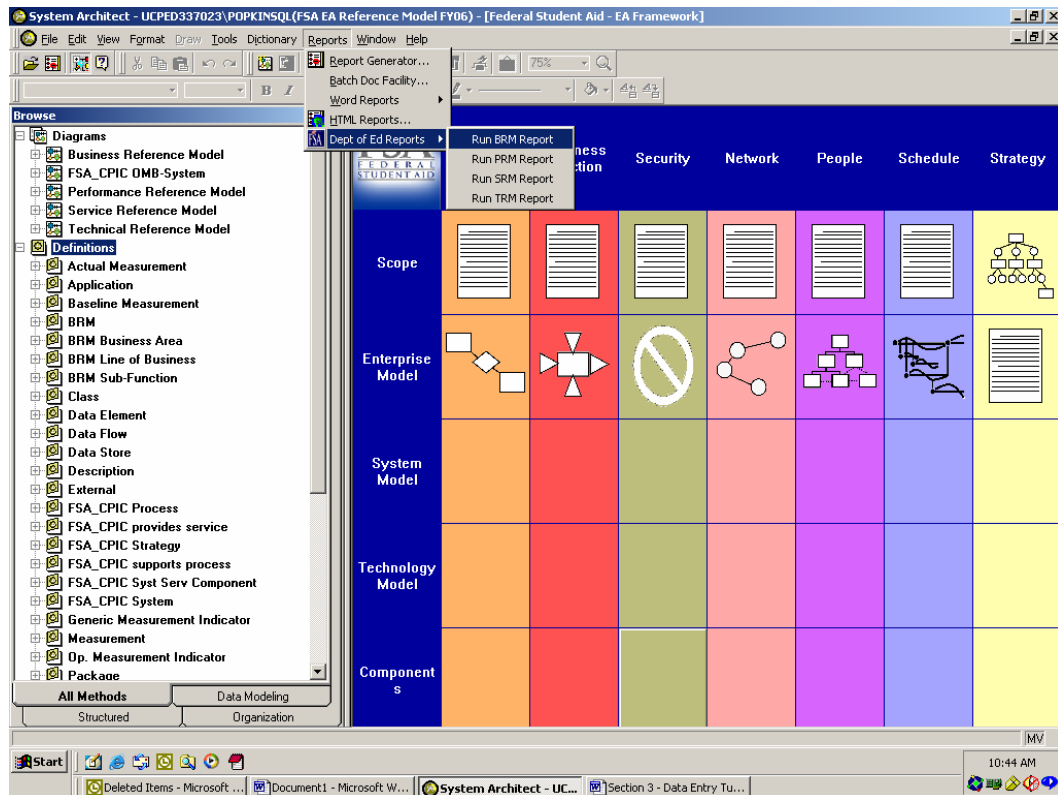
4. This launches the corresponding VBA Macro to build a PRM, BRM, SRM, or TRM report using Microsoft Word.

5. For example, selecting the **Run BRM Report** option launches the VBA Macro, which builds a report with BRM data in Microsoft Word as shown on the next page.

Accessing FEAPMO Reference Model Reports from Popkin Repository (Continued)

6. After viewing this report, the user may choose to save this report in Microsoft Word or HTML format.

Configuration Management of the Popkin System Architect Tool

Overview

The purpose of this section is to provide guidelines regarding configuration management of the Popkin System Architect tool in the Federal Student Aid (FSA) environment. The configuration management procedures outlined in this document are in the context of the Reference Model Artifacts, which are being developed by the Pearson-IBM team in Popkin. The different artifact versions will have to be managed by external version control tools, which are currently being evaluated. Popkin upgrades and migration will need to be managed according to specified procedures.

Configuration Management of the Popkin Tool (Continued)

Popkin Users

The following diagram depicts the main types of users in the FSA environment with Configuration Management responsibilities.

EA Infrastructure

EA Users	EA Knowledge Content		EA Modeling Environment	Hosting Environment

End Users
 • Use EA Knowledge
 • Request Correction to EA Knowledge
 	
 Subject Matter Experts
 • Use EA Knowledge
 • Request Addition to EA Knowledge
 	
 Power Users
 • Special Analyses
 • Specific Reports
	EA Architect
	 • What EA content to include
	 • Who has access to what content
	 • How to best represent content for EA users at conceptual level
		Administrator(s)
		 • Admin. Access Privileges
		 • Backups
		 • Version Installs & Upgrades
			Repository Architect
			 • EA Repository Content Mgmt
			 • Merge/Freeze
			 • Configuration Mgmt
			 • Assigning work to modelers
			 • How to best implement content for EA users in Popkin
			 • Repository Capabilities Development
			  • Meta-model
			  • USRPROPS
			 • Content Version Migration
			 • Supervise Administrators
			 • Train Modelers
			
			 Modelers
			 • Capture/ modify EA Content
				Host Environment Administrator
				 • Hardware, Software, and Network Maintenance & Support

Fig 1 – EA Knowledge Life Cycle Roles & Responsibilities

As depicted in this diagram, the main types of users in the FSA environment are:

- End User
  - Business Owner, Capital Planning & Investment Control (CPIC) User etc.
- Subject Matter Expert (SME)
- Power User
- Enterprise Architecture (EA) Architect
  - Business Architect, Information Technology (IT) Architect
- Administrator
- Repository Architect (Primary & Secondary)
- Modeler
- Host Environment Administrator

Configuration Management of the Popkin Tool (Continued)

End User

End Users are typical users, such as a Business Owner, CPIC User, etc., who need to view the content of the artifacts within the FSA repository. An End User will have the capability to view the contents of the encyclopedia in HTML format, using the Internet. He/she will have to rely on the Repository Architect for tasks related to encyclopedia updates, maintenance etc.

Subject Matter Expert (SME)

A Subject Matter Expert is a combination of an EA content contributor as well as a user. A SME helps in the identification of the needed EA content changes, and helps to prompt new revisions in the area of his/her expertise.

Power User

A Power User has direct access to the EA repository and certain abilities to perform special analysis on the repository data, such as Quality Assurance, Audit, Performance Analysis, Availability and Maintainability Checks etc. They might use external tools for Analytic Processing, Simulation etc.

EA Architect

EA Architects include both the Business Architect and IT Architect, with a certain set of Configuration Management responsibilities.

A Business Architect is responsible for interpreting the Office of Management and Budget (OMB) guidance, communicating this guidance to the rest of the agency, developing boilerplates, and collecting information from SMEs and End Users to populate the reference models.

An IT Architect is responsible for making EA content decisions, determining what should be included in the repository, determining who has access to what content, and how to best represent content for users of the repository data.

The IT and Business Architect have to perform regular Analysis and Evaluation of the Reference Model Content. The IT Architect will also be responsible for managing the overall Governance Process.

Configuration Management of the Popkin Tool (Continued)

Administrator

> The Administrator is responsible for administering EA Repository access rights and change privileges for the modelers and users under the direction of the Repository Architect. The Administrator is also responsible for making regular backups of the EA repository, as outlined in the overlying Governance Process.

Repository Architect

> The Repository Architect is responsible for numerous maintenance and administrative tasks in regards to the Popkin Repository. This includes Repository Content Management, deciding how to best represent content for users, and assigning work to modelers. The Repository Architect is also responsible for configuration control of the EA Meta-model, Customization File (USRPROPS.TXT), and the EA Repository. There is a Primary Repository Architect who is backed up by a Secondary Repository Architect for certain tasks and in times of unavailability.

Modeler

> Modelers capture EA content in the Work in Progress (WIP) repository under the guidance of the Repository Architect. Modelers are responsible for modeling using the applicable standards as well as proper backup and transfer of their models.

Host Environment Administrator

> The Host Environment Administrator provides hardware, software, and network support for the EA Repository environment, and is responsible for version installs and upgrades, routine backups, ensuring the availability of the servers and network, security issues etc.

Configuration Management of the Popkin Tool (Continued)

The following table lists the tasks that will be performed by the different system users on a regular basis along with the corresponding frequency of these tasks. These tasks are described in further detail in the sections that follow.

Configuration Management Task	Roles	Frequency of Task
Backup	Administrator	Weekly
Access Control Maintenance	Administrator	Weekly
Monitor OMB	EA Architect	Monthly
Submitting Change Requests	End User, Subject Matter Expert (SME)	As Required
Fulfilling Change Requests	Modeler	As Required
Content Check	SME	Every 2 Weeks
Structural & Consistency Checks	Repository Architect	Every 2 Weeks
Popkin Upgrades	Host Environment Administrator	Every 2 Weeks
Updating Backup Log	Administrator	Weekly
Updating Administrative Log	Administrator	Weekly
Updating Change Log	Repository Architect	Weekly
Updating Maintenance Log	Host Environment Administrator	Every 2 Weeks

Table 1: Configuration Management Roles and Responsibilities

Popkin Configuration Management Tasks

Populating & Updating the FSA Repository

The Repository Architect and Modelers have the authorization to make direct changes to the repository artifacts, using the Popkin tool. Other users within FSA will be given the ability to view the data in the different encyclopedia versions as HTML forms, using the Internet. However, the capability for data maintenance and data access using the Popkin tool will lie only in the hands of the Repository Architect and Modelers.

If a typical FSA user wants to change the content of a repository artifact, he/she will have to follow the defined approval process to get the change request approved. Once this change request has been approved, the Repository Architect or a Modeler would be responsible for making the actual change in the Popkin tool, which may include:

- Populating the repository with new artifacts
- Making updates to the existing artifacts
- Deleting a particular artifact from the repository
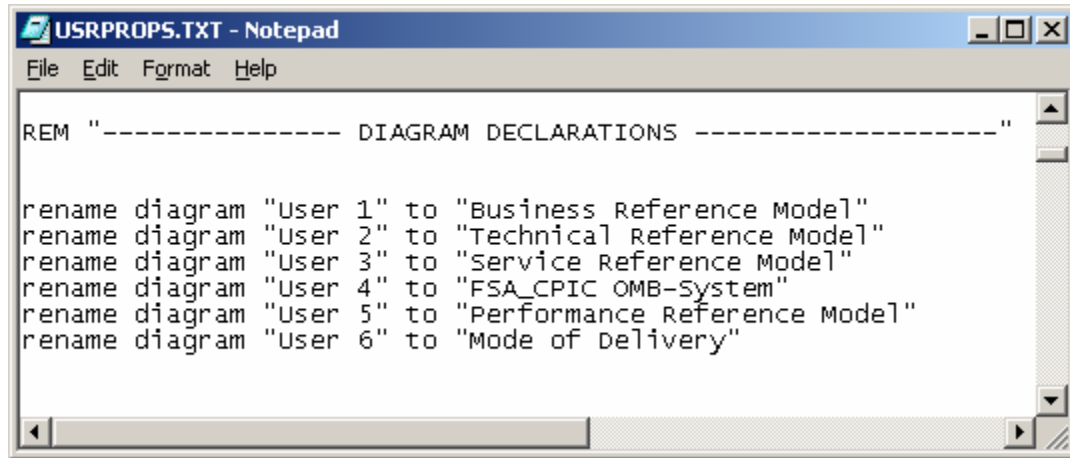
The encyclopedia classification as well as the defined approval process will have an impact on the updates that the Repository Architect can make to the data in the encyclopedia.

Customizing Diagram Types

The Pearson-IBM team has made use of the available best practices as well as guidance from other IBM projects to come up with customized diagram types for creating EA artifacts. In case an FSA user has a recommendation for making modification(s) to an existing diagram type, this request should be formally submitted and approved, based on the defined process.

Upon the approval of this request, the Repository Architect will make the appropriate changes in the "USRPROPS.TXT" Popkin customization file, to reflect the approved changes to the corresponding Diagram Type. Also, the Repository Architect would ensure that all the existing artifacts based on that diagram type are modified appropriately, to reflect the respective changes.

Popkin Configuration Management Tasks (Continued)

```
USRPROPS.TXT - Notepad                                    _ □ ×

File  Edit  Format  Help

REM "--------------- DIAGRAM DECLARATIONS --------------------"


rename diagram "User 1" to "Business Reference Model"
rename diagram "User 2" to "Technical Reference Model"
rename diagram "User 3" to "Service Reference Model"
rename diagram "User 4" to "FSA_CPIC OMB-System"
rename diagram "User 5" to "Performance Reference Model"
rename diagram "User 6" to "Mode of Delivery"
```
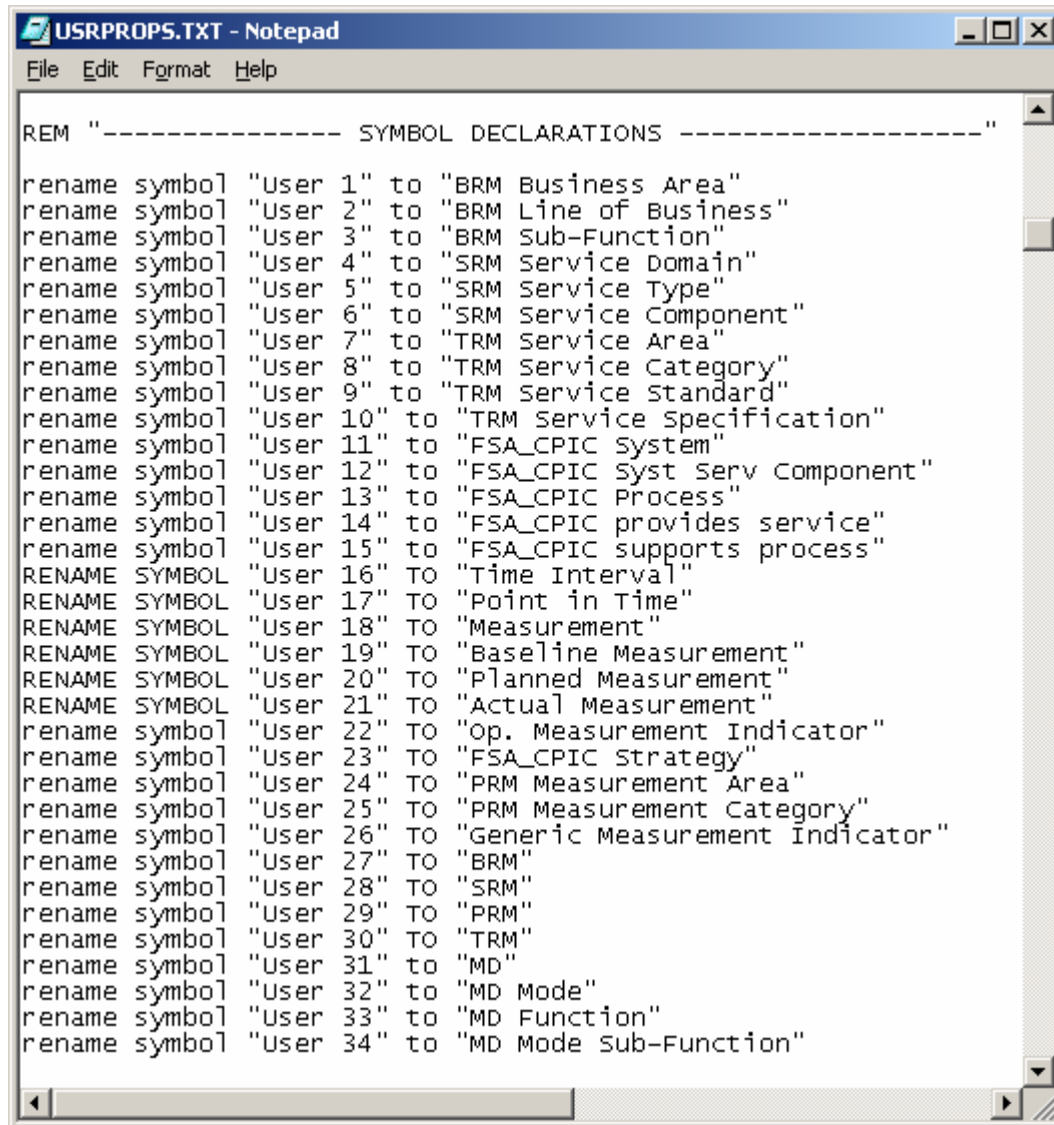
Figure 2 - Sample USRPROPS.txt Diagram Declarations

Modifying the Symbols within a Diagram Type

The Pearson-IBM team has made use of the current best practices in the selection of Symbols corresponding to a particular Diagram Type. In case an FSA user has a recommendation for making modification(s) to the properties of a certain Symbol, for a particular Diagram Type, this request should be formally submitted and approved, based on the defined Governance process.

Upon the approval of this request, the Repository Architect will make the appropriate changes in the "USRPROPS.TXT" Popkin customization file, to reflect the approved changes to the properties of that Symbol. Also the Repository Architect would ensure that all the existing artifacts based on that diagram type, which use the modified Symbol, are modified appropriately to reflect these changes.

Popkin Configuration Management Tasks (Continued)


```
USRPROPS.TXT - Notepad                                      _ □ ×
File  Edit  Format  Help

REM "--------------- SYMBOL DECLARATIONS ---------------"

rename symbol "User 1" to "BRM Business Area"
rename symbol "User 2" to "BRM Line of Business"
rename symbol "User 3" to "BRM Sub-Function"
rename symbol "User 4" to "SRM Service Domain"
rename symbol "User 5" to "SRM Service Type"
rename symbol "User 6" to "SRM Service Component"
rename symbol "User 7" to "TRM Service Area"
rename symbol "User 8" to "TRM Service Category"
rename symbol "User 9" to "TRM Service Standard"
rename symbol "User 10" to "TRM Service Specification"
rename symbol "User 11" to "FSA_CPIC System"
rename symbol "User 12" to "FSA_CPIC Syst Serv Component"
rename symbol "User 13" to "FSA_CPIC Process"
rename symbol "User 14" to "FSA_CPIC provides service"
rename symbol "User 15" to "FSA_CPIC supports process"
RENAME SYMBOL "User 16" TO "Time Interval"
RENAME SYMBOL "User 17" TO "Point in Time"
RENAME SYMBOL "User 18" TO "Measurement"
RENAME SYMBOL "User 19" TO "Baseline Measurement"
RENAME SYMBOL "User 20" TO "Planned Measurement"
RENAME SYMBOL "User 21" TO "Actual Measurement"
rename symbol "User 22" TO "Op. Measurement Indicator"
rename symbol "User 23" TO "FSA_CPIC Strategy"
rename symbol "User 24" TO "PRM Measurement Area"
rename symbol "User 25" TO "PRM Measurement Category"
rename symbol "User 26" TO "Generic Measurement Indicator"
rename symbol "User 27" TO "BRM"
rename symbol "User 28" TO "SRM"
rename symbol "User 29" TO "PRM"
rename symbol "User 30" TO "TRM"
rename symbol "User 31" to "MD"
rename symbol "User 32" to "MD Mode"
rename symbol "User 33" to "MD Function"
rename symbol "User 34" to "MD Mode Sub-Function"
```

Fig. 3 Sample USRPROPS.txt Symbol Declarations

Popkin Configuration Management Tasks (Continued)

Encyclopedia Classification

As a part of the ongoing efforts of FSA, different versions of the FSA Repository will be developed. In order to classify the different versions based on the maturity of content, the following encyclopedia classifications will be used:

Non-Validated:

Signifies that the Encyclopedia is still in a working state, and the business owners have not yet validated the content.

Validated & Published:

Signifies that the content in the Encyclopedia has already been validated by the respective business owners, and has been published for general use.

Archived/Official:

Signifies that the Encyclopedia has been archived. If an encyclopedia is archived as Official, it means that it had been validated, and the content regarding the Reference Models had been submitted as a part of the ES300 submission for that fiscal year.

Popkin Configuration Management Tasks (Continued)

The following diagram depicts the configuration management process flow for major System Architect components in the EA modeling environment.

EA Components Configuration Management

METAMODEL

Non-Validated → Validated & Published → Archived/ Official

USRPROPS

Non-Validated → Validated & Published → Archived/ Official

ENCYCLOPEDIA*

User Access (HTML)

Data Input/ Modification → Non-Validated → Validated & Published (Encyclopedia & HTML) → Archived/ Official

Data Deletes

Power Users

*** Includes Reports, Macros, Images, etc.**
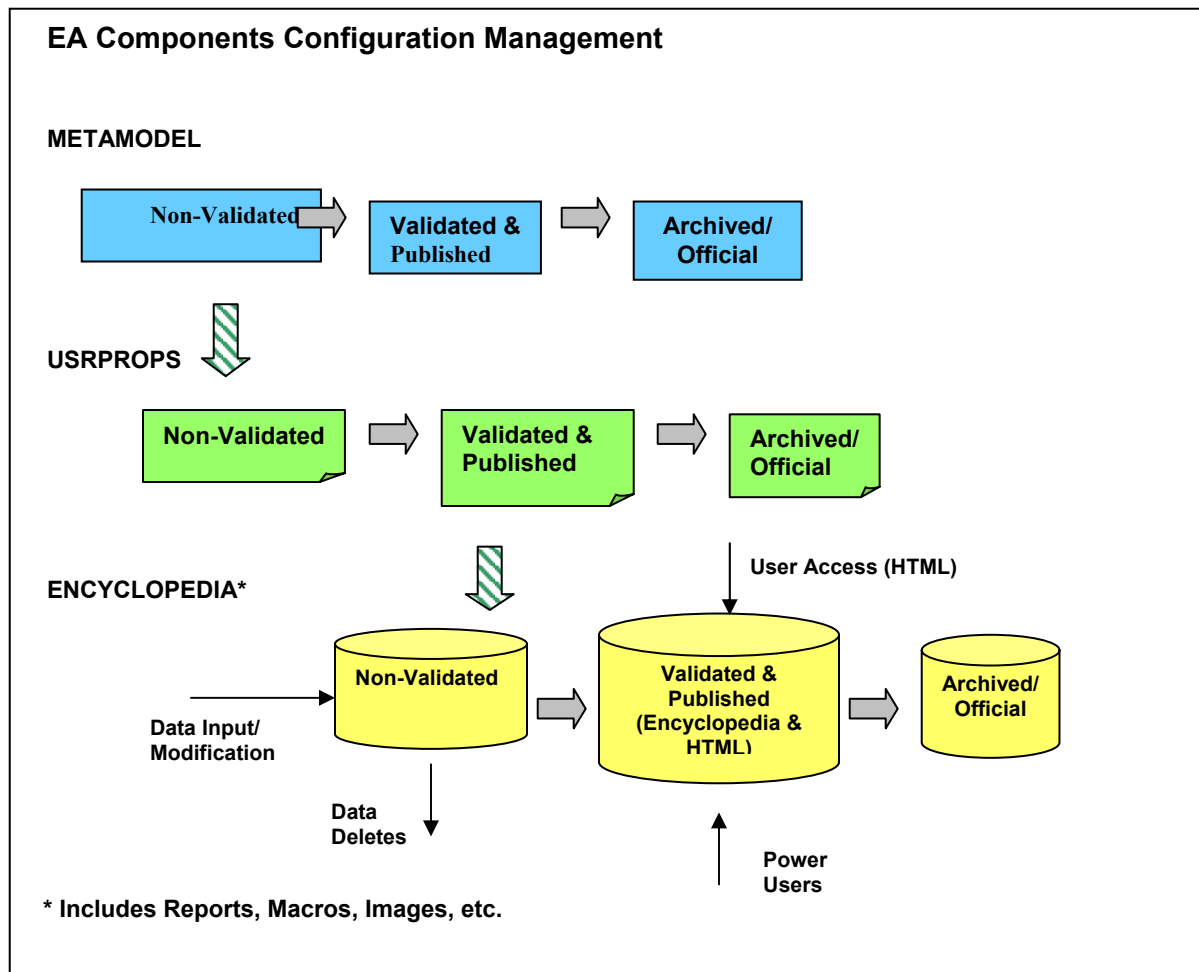
Figure 4 - EA Components Configuration Management

The Repository Architect will manage the classification process of the different System Architect EA components, depending on their working state, as well as the overlying governance process.

Popkin Configuration Management Tasks (Continued)

Naming Conventions for the Different Encyclopedias

The Repository Architect will ensure that standard naming conventions are used for naming the encyclopedia versions.

The standard format for a Encyclopedia Name would be as follows:

FSA-EA-FEAF 4RMs <FYyy> <Popkin Version Number> <Encyclopedia Version Number> <Encyclopedia Classification>

Description / Examples of the format:

<FYyy>:   Current Fiscal Year e.g. FY03

<Popkin Version Number>:   e.g. PV 9_0, PV 9_1, etc.

<Encyclopedia Version Number>:   e.g. Version 0, Version 1, etc.

<Encyclopedia Classification>:   e.g. Non-Validated, Validated, Official

Examples of some valid Encyclopedia Names:

FSA-EA-FEAF 4RMs FY03 PV 9_1 Version 1 Non-Validated
FSA-EA-FEAF 4RMs FY03 PV 9_0 Version 0 Validated and Published

The Repository Architect must ensure that the defined approval process is followed before refining or adding to the above naming convention.

Naming Conventions used for USRPROPS.TXT

The USRPROPS.TXT file uses certain naming conventions while defining the variable names.

The purpose of this is to ensure consistency in the approach in which the different teams working on different sub-sections of the master encyclopedia define their custom variables. The use of these naming conventions also helps the team members to differentiate between the variables defined by their team, from those that have been defined by another team.

Popkin Configuration Management Tasks (Continued)

For example, at FSA, the Enterprise Architecture team has used the following naming convention to represent their custom variables:

FSA_CPIC <variable name>

Ex: "FSA_CPIC System" variable was used to denote a System, as defined by the FSA Enterprise Architecture team.

Also other teams, such as the Data Architecture team within FSA will use their own naming conventions to define the variables being used specifically by their team. The Data Architecture team has decided to use "FSA_DA <variable name>" as the naming convention to define their custom variables.

The Repository Manager will ensure that each team uses unique naming conventions in order to prevent any confusion or overlap in the definition of the custom variables.

Declarations of Custom Variables

Popkin has a certain range of variables that are used in the declaration of custom Diagram Types, Symbols and Definitions. When declaring a custom variable of these types, the user may pick a variable of the corresponding variable type, from the pre-defined Popkin ranges, which are as follows:

Diagram Types:	User 1 – User 40
Symbols:	User 1 – User 120
Definitions:	User 1 – User 120

Based on team discussions within FSA, it has been decided that the above ranges will be split as follows for the purposes of FSA CPIC Team, FSA DA Team, and the Department of Education Team.

FSA CPIC Team

Diagram Type:	User 1 – User 15
Symbols:	User 1 – User 60
Definitions:	User 1 – User 60

FSA DA Team

Diagram Type:	User 16 – User 20
Symbols:	User 61 – User 90
Definitions:	User 61 – User 90

Popkin Configuration Management Tasks (Continued)

<u>Department of Education Team</u>

Diagram Type:	User 21 – User 40
Symbols:	User 91 – User 120
Definitions:	User 91 – User 120

The FSA CPIC, FSA DA, and the Department of Education teams must choose from the above ranges when selecting a custom variable for declaration purposes within USRPROPS.txt.

The Repository Manager must ensure that these teams follow the above selection procedure for variable declarations, and must work to resolve any discrepancy.

Naming Conventions for Repository Diagrams

The Repository Architect will ensure that standard naming conventions are used for naming the Repository Diagrams.

The standard format for a Diagram name would be as follows:

<Application Name> <mmddyy> <Diagram Classification>

<u>Description / Examples of the format:</u>

<Application Name>:   e.g. COD, CPS etc

<mmddyy>:   2 digits for month, date, and year of the
                                                        date of diagram creation

<Diagram Classification>:   Draft, Reviewed, Submitted

<u>Examples of Some Valid Repository Diagram Names:</u>

COD   072503 Submitted
CPS   090803 Draft
SAIG 080803 Reviewed

The Repository Architects must ensure that the defined approval process is followed before refining or adding to the above naming convention.

Popkin Configuration Management Tasks (Continued)

Management of Customized Reports

The Administrator will be responsible for the management of Customized Reports within the current working encyclopedia.

The Administrator will execute and make a backup of these reports every week. The procedure for doing this is outlined below (the PRM report has been used as an example).

1. Open the System Architect and launch the Reference Model encyclopedia.

2. Go to **Reports, Dept. of Ed Reports, Run PRM Report**.

3. Wait for a few minutes for the Macro to Run and generate the PRM Report in Word Format.

4. Save this Report in C:\Program Files\Popkin Software\System Architect\Encyclopedias\Reports.

5. Follow the following naming convention for naming the Backup Report:

   FSA <Reference Model> Report <mmddyy>.doc

   Description / Examples of the format:

   <Reference Model>   PRM, BRM, SRM, or TRM

   <mmddyy>   The first 2 digits of the month, day, and year
                              of the date when the backup is being made.

   Example of a Popkin Report Name:

   FSA PRM Report 013104.doc

6. Repeat these steps for making a backup of the BRM, SRM and TRM reports.

Popkin Configuration Management Tasks (Continued)

Encyclopedia Backups

The Administrator will be responsible for making a weekly backup of the current working encyclopedia, and every time an encyclopedia reaches the Validated and Published classification state.

The Administrator must follow the steps on the next page to make a backup of the current working repository:

1. Open the System Architect Encyclopedia Manager (SAEM) tool by going to Start → Programs → Popkin Software → SAEM. This will launch the following window.
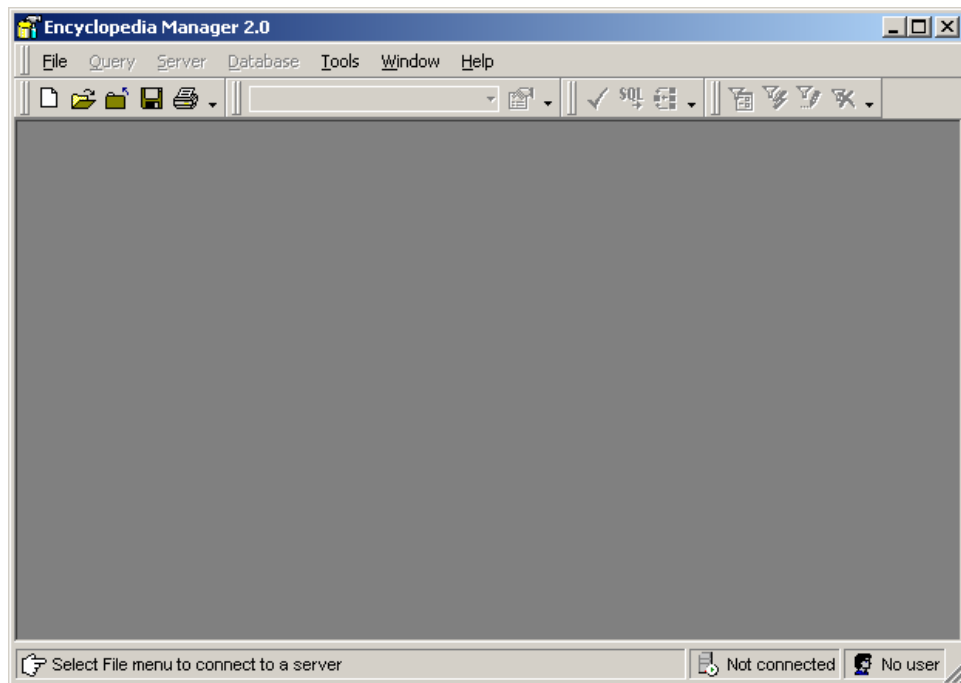
2. In order to connect and authenticate with the appropriate SQL Server, go to **File, Connect** from the main menu. The following window will open.

Popkin Configuration Management Tasks (Continued)
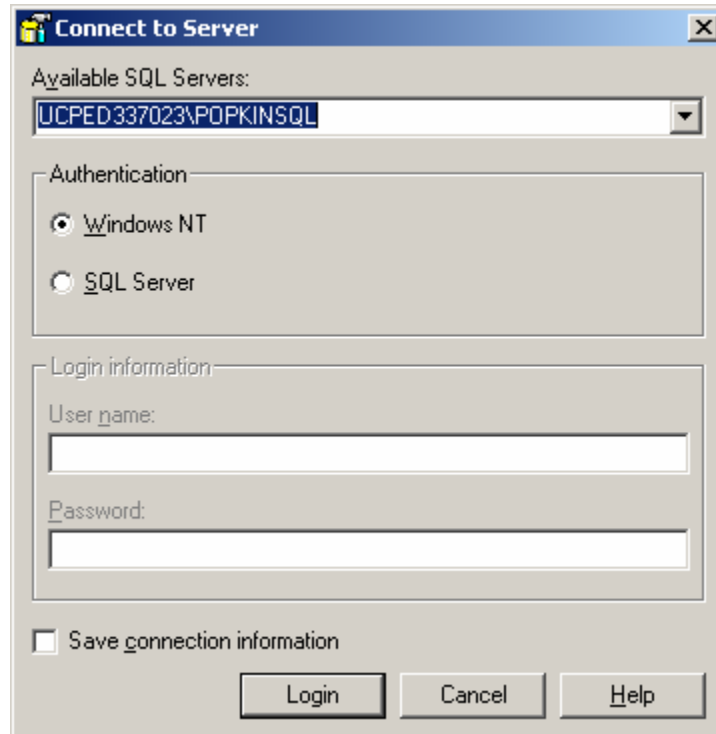
3. Fill out the fields in this window exactly as depicted in the window above, and click on Login. This will successfully log the user into SAEM.

4. Go to **Database, Select Database** from the **Tool** Menu.
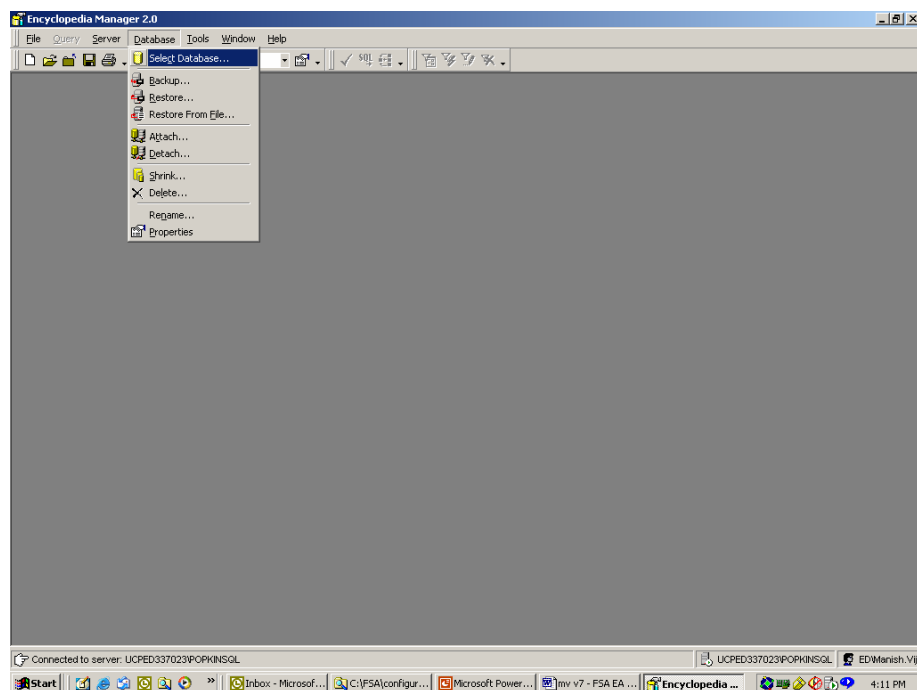
Popkin Configuration Management Tasks (Continued)

5. Select the corresponding database, which needs to be backed up. Click on the OK button to select this Database.
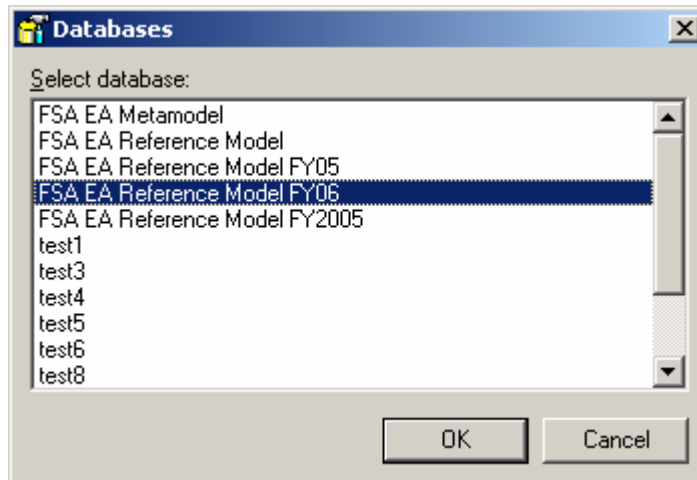
6. From the Tools menu again, go to "Database → Backup". This will open the Backup Database window.
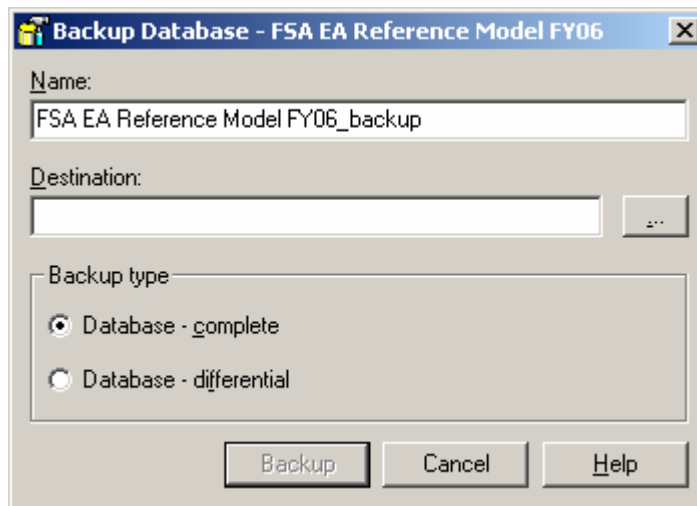
7. In the Name field, enter the name of the Database that needs to be backed up.

8. In the Destination field, use the Browse button to select the path where this backup needs to be stored, i.e., C:\Program Files\Popkin Software\System Architect\Encyclopedias\Backup. Enter the name of the backup in the "File Name" field in the "Select Backup File Name" window.

Popkin Configuration Management Tasks (Continued)

9. Follow the following naming convention for naming the Backup Encyclopedia:

    <Encyclopedia Name> backup_<mmddyy>.bak

    Description / Examples of the format:

    <Encyclopedia Name>   Name of the encyclopedia that is being backed up.

    <mmddyy>   The first 2 digits of the month, day, and year of the date when the backup is being made.

    Example of a Backup Encyclopedia Name:

    FSA EA Metamodel_backup_111103.bak

8. In the Backup Type field, click on the **Database - Complete** radio button and then click on the **Backup** button.

9. This backup file should now exist under "C:\Program Files\Popkin Software\System Architect\Encyclopedias\Backup".

Encyclopedia Restore

The Administrator can restore the backup encyclopedias using the Restore capability of System Architect Encyclopedia Manager.

The Administrator must follow the following steps to restore the current working repository:

1 Open the System Architect Encyclopedia Manager (SAEM) tool by going to **Start, Programs, Popkin Software, SAEM**. This will launch the following window (seen on the next page).

Popkin Configuration Management Tasks (Continued)
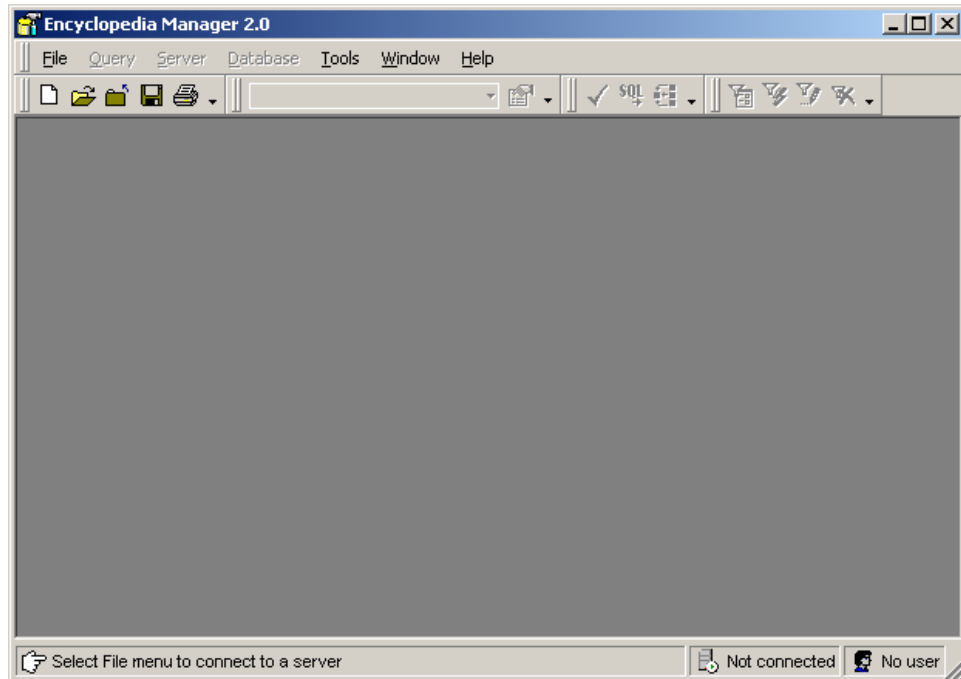
1. In order to connect and authenticate with the appropriate SQL Server, go to **File, Connect** from the main menu. The following window will open.
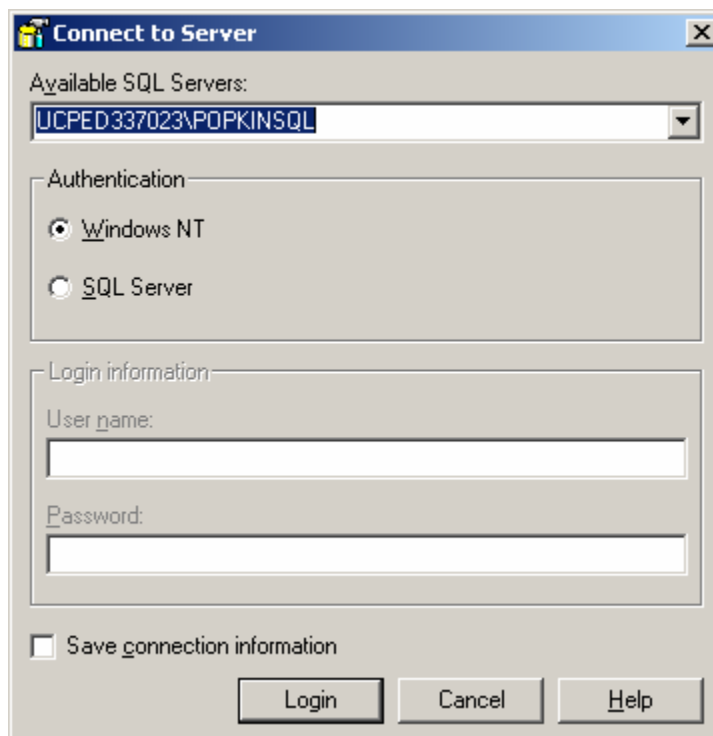
Popkin Configuration Management Tasks (Continued)

2. Fill out the fields in this window exactly as depicted in the window above, and click on Login. This will successfully log the user into SAEM.

3. Go to **Database, Select Database** from the **Tools** Menu
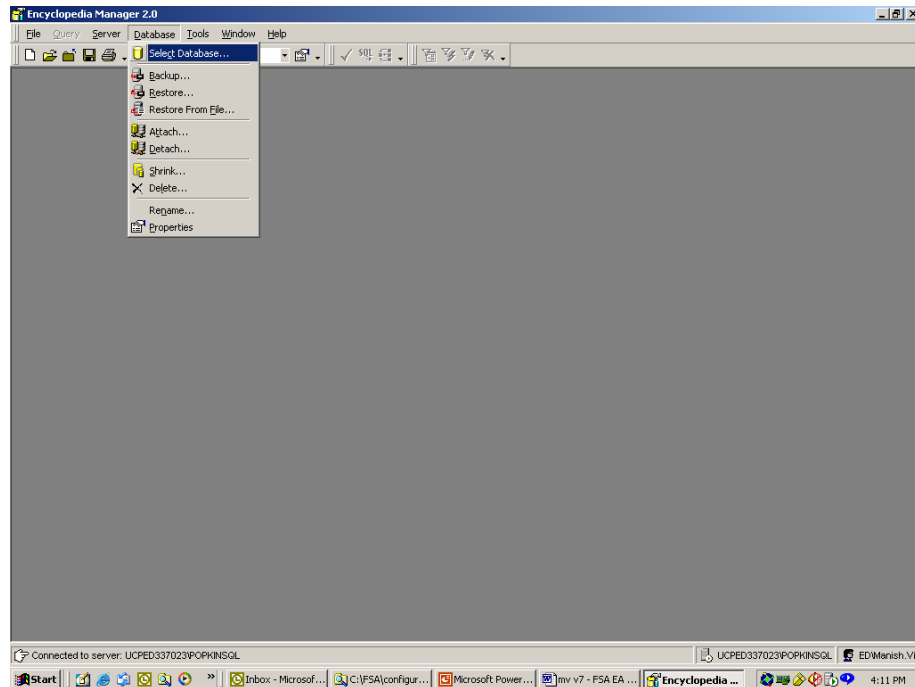
4. Select the corresponding database, which needs to be restored. Click **OK** to select this Database.
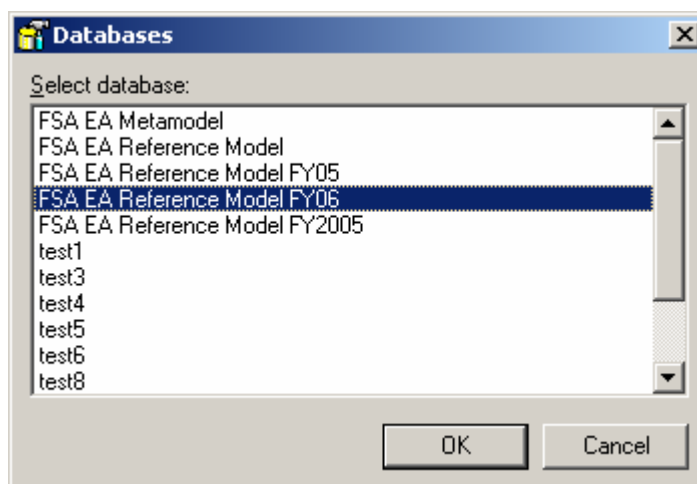
5. From the Tools menu again, go to "Database, Restore". This will open up the Restore Database window.

Popkin Configuration Management Tasks (Continued)
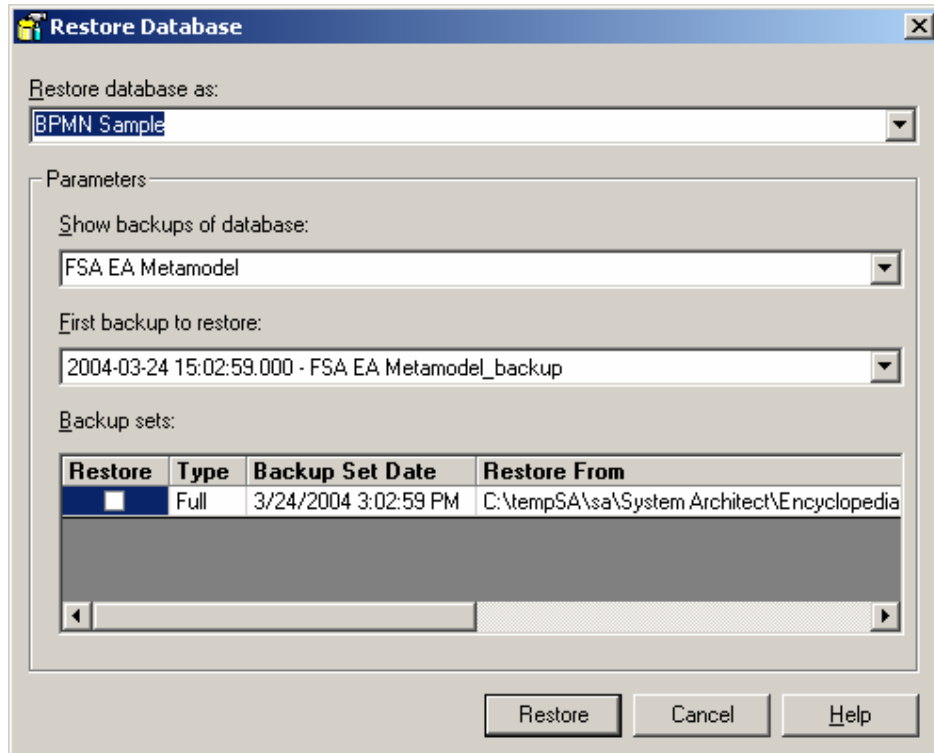
6. In the "Restore database as" field, enter the name of the Database, as it should be restored.

7. In the "Show backups of database" field, select the database from the combo field, which needs to be restored.

8. In the "First backup to restore:" field, select the appropriate version of that database file (based on timestamp), which needs to be restored.

9. In the "Backup sets:" field, select the row that represents the file that is being restored.

10. Click on the **Restore** button to restore this database. This restored encyclopedia is now ready to be used through System Architect.

Popkin Configuration Management Tasks (Continued)

Ensuring that Guidelines for Populating the Encyclopedia are Observed

Once every two weeks, the Primary or Secondary Repository Architect will take the time to ensure that the guidelines for populating the working encyclopedia are being observed, and that there are no inconsistencies.

The Repository Architect should include the following steps while conducting the review process:

1. Open the Encyclopedia using the System Architect **File, Open Encyclopedia** option. Ensure that no error or warning messages are encountered while opening the Encyclopedia.

2. Open the Encyclopedia Browser and the Default Framework, using the File and Toolbar Menu options. Ensure that the ED framework is properly displayed on the right-hand side. Also, expanding the Diagrams folder in the browser on the left should bring up the sub-folders for each Diagram Type that was created.

3. Expand the sub-folder for each Diagram Type, and ensure that the appropriate naming conventions have been followed for naming each diagram.

4. Under the sub-folder for each Diagram Type, open up each diagram one by one. Each of these diagrams should open up as expected.

5. Ensure that the appropriate templates were used for each diagram type, and that all the diagrams within a particular Diagram Type follow the consistent defined format.

6. Use the Report Generator capability of Popkin to create reports of the Popkin Artifacts. Ensure that the diagram contents, including the notations, are captured accurately in the Report format.

In case an inconsistency is observed during the review process, the FSA Primary or Secondary Repository owner should make the appropriate changes to ensure that the working repository conforms to the guidelines set by the governance process.

Popkin Configuration Management Tasks (Continued)

Popkin Version Installs and Upgrades

The Administrator will be responsible for taking care of the Popkin Version Installs and Upgrades, for use in the FSA environment.

Installs

If a user wants Popkin to be installed on his/her machine, he/she will follow the guidelines laid down in the Governance Process to request a Popkin License to be installed on that machine.

Upon receiving an approval for the install, the Administrator will follow the installation procedures, as outlined in the Popkin Installation Guide document to install Popkin on the user's machine.

Upgrades

In terms of Popkin Upgrades, the Administrator would be responsible for providing information on the new versions of tool to the Approval Committee as these new versions become available. Based on this information, the approval committee will make a decision regarding whether a Popkin Upgrade is required at that point.

If the upgrade of the Popkin Version is approved, the Administrator will follow the procedures related to Version Upgrades, as outlined in the Popkin Installation Guide document. The Administrator will make a backup of the old version of the encyclopedia before starting the upgrade process.

After the upgrade and migration of the data is complete, the Administrator will test the new Encyclopedia to ensure that all the artifacts from the older version are successfully captured in the new version.

Log Maintenance

The FSA Repository Owner will be responsible for maintaining and updating the necessary logs on a regular basis, in order to record the tasks performed with the FSA Encyclopedia. He/she will be required to maintain a Backup, Administrative, Change, and Maintenance Logs, the processes for which are defined and explained as follows:

Popkin Configuration Management Tasks (Continued)

Backup Log

After performing a backup of the current working repository, the Administrator should make an entry into the Backup Log to record the completion of the backup process. Just like the encyclopedia backups, this process will also be performed on a weekly basis, right after the backup of the encyclopedia has been completed.

The Administrator will take the following steps as a part of updating the Backup Log:

1. Go to the "\Popkin Software\System Architect\Logs\Backup Log\" directory structure.

2. Open the "Backup_Log.xls" file. A sample of this file is given below:

Backup Date	Time Completed	Name of Backup File	Notes

3. Make the entry into the spreadsheet to record the successful completion of the Backup, by entering the "Backup Date", "Time Completed", "Name of Backup File", and "Notes" data fields.

4. Once the entry has been recorded, save the "Backup_log.xls" file.

Administrative Log

The Administrative Log will be used by the Administrator to record any changes to the Access Control Rights provided to the different FSA users. This may be at the time of Adding, Updating, or Deleting the access rights of a user. This log will be updated as required, after the Administrator completes a request for a particular FSA user.

Popkin Configuration Management Tasks (Continued)

The Administrator will take the following steps as a part of updating the Administrative Log:

1 Go to the "\Popkin Software\System Architect\Logs\Administrative Log\" directory structure.

2 Open the "Administrative_Log.xls" file. A sample of this file is given below:

Request Time & Date	Request Description	Action Performed	Completion Time & Date	Notes

3. Make the entry into the spreadsheet to record the successful completion of the Administrative action performed by entering the "Request Time & Date", "Request Description", "Action Performed", "Completion Time & Date", and "Notes" data fields.

4. Once the entry has been recorded, save the "Administrative_Log.xls" file.

Change Log

The Change Log will be used by the Repository Architect to record any changes made to Repository Artifacts, based on the request of an FSA user. This may include Adding, Modifying, or Deleting any of the Artifacts in the repository. The Repository Architect must ensure that the necessary approval is in place before these changes are made.

The Change Log will be updated as required, after the Repository Architect completes a particular Change Request for a particular FSA user.

Popkin Configuration Management Tasks (Continued)

The Repository Architect will take the following steps as a part of updating the Change Log:

1. Go to the "\Popkin Software\System Architect\Logs\Change Log\" directory structure.

2. Open the "Change_Log.xls" file. A sample of this file is given below:

Request Time & Date	Request Description	Action Performed	Artifact Impacted	Completion Time & Date	Notes

3. Make the entry into the spreadsheet to record the successful completion of the Change Request action performed by entering the "Request Time & Date", "Request Description", "Action Performed", "Artifact Impacted", "Completion Time & Date", and "Notes" data fields.

4. Once the entry has been recorded, save the "Change_Log.xls" file.

Maintenance Log

The Maintenance Log will be used by the Host Environment Architect to record any actions related to hardware, software, or network maintenance/support. This may include tool installs, upgrades, etc. The Host Environment Architect must ensure that the necessary approval is in place before these actions are performed.

Popkin Configuration Management Tasks (Continued)

The Repository Architect will take the following steps as a part of updating the Change Log:

1. Go to the "\Popkin Software\System Architect\Logs\Maintenance Log\" directory structure.

2. Open the "Maintenance_Log.xls" file. A sample of this file is given below:

Initiation Time & Date	Action Performed	Completion Time & Date	Notes
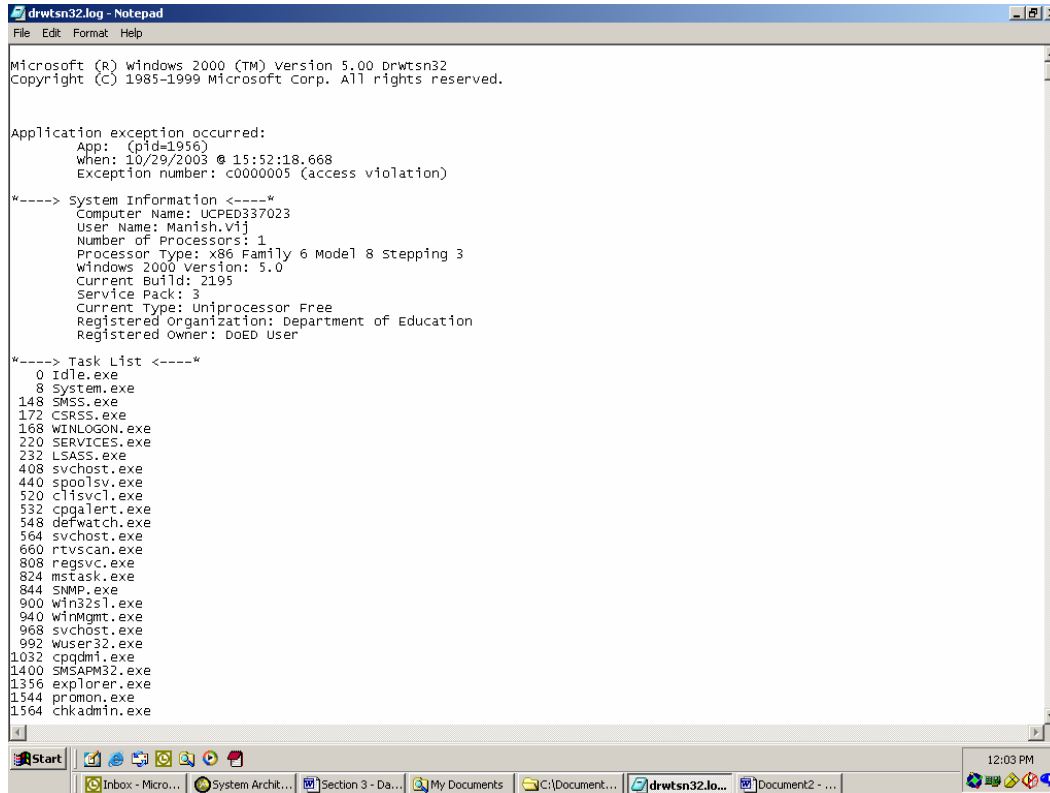
3. Make the entry into the spreadsheet to record the successful completion of the Maintenance action performed by entering the "Initiation Time & Date", "Action Performed", "Completion Time & Date", and "Notes" data fields.

4. Once the entry has been recorded, save the "Maintenance_Log.xls" file.

Popkin Error Log File

In the event of any Application or System related crashes with Popkin, an Error Log is generated for audit purposes of the Administrator. This Error Log file, namely "drwtsn32.log" is stored under the path "C:\Documents and Settings\All Users\Documents\DrWatson".

A sample view of this log generated by the Popkin, is as follows (on the next page).

Popkin Configuration Management Tasks (Continued)

```
drwtsn32.log - Notepad
File  Edit  Format  Help

Microsoft (R) Windows 2000 (TM) Version 5.00 DrWtsn32
Copyright (C) 1985-1999 Microsoft Corp. All rights reserved.


Application exception occurred:
        App:  (pid=1956)
        When: 10/29/2003 @ 15:52:18.668
        Exception number: c0000005 (access violation)

*----> System Information <----*
        Computer Name: UCPED337023
        User Name: Manish.Vij
        Number of Processors: 1
        Processor Type: x86 Family 6 Model 8 Stepping 3
        Windows 2000 Version: 5.0
        Current Build: 2195
        Service Pack: 3
        Current Type: Uniprocessor Free
        Registered Organization: Department of Education
        Registered Owner: DoED User

*----> Task List <----*
   0 Idle.exe
   8 System.exe
 148 SMSS.exe
 172 CSRSS.exe
 168 WINLOGON.exe
 220 SERVICES.exe
 232 LSASS.exe
 408 svchost.exe
 440 spoolsv.exe
 520 clisvcl.exe
 532 cpqalert.exe
 548 defwatch.exe
 564 svchost.exe
 660 rtvscan.exe
 808 regsvc.exe
 824 mstask.exe
 844 SNMP.exe
 900 win32sl.exe
 940 winMgmt.exe
 968 svchost.exe
 992 wuser32.exe
1032 cpqdmi.exe
1400 SMSAPM32.exe
1356 explorer.exe
1544 promon.exe
1564 chkadmin.exe
```

The Administrator can audit this file to clarify the issue that led to the Error
Generation in the tool. This includes the technical details surrounding the error, and
also the date, time-stamp etc. Tracking the exact point where the error occurred can
help the Administrator pinpoint the source of the error, and provide the administrator
with the information needed to investigate this issue further.

ED EA Meta-Model (Draft V1.0)

Dept of ED EA Metamodel Diagram

Draft Version 1.0

ED EA Meta-Model Diagram – Supporting Documentation

Overview

An Enterprise Architecture (EA) Meta-Model is a visual description summary of the items of information and their relationships, which will be maintained in the EA. The purpose of defining a Meta-Model is to enable consistent communication between EA architects during the EA modeling design phase, and then to guide the development of the corresponding System Architect EA modeling environment. Having these Meta-Model relationships defined enables the EA users to do the corresponding analysis and reporting on the various EA artifacts stored in the Repository.

The focus of this Meta-Model is to provide the Department of Education (ED) with a blueprint that can be used to develop the different EA Artifacts that capture Office of Management and Budget (OMB) Reference Model specific data, while leaving placeholders to tie this information with the overall ED EA components, including ED processes, strategies, and technology components, etc. This Meta-Model is intended to provide a standard approach for ED and its agencies to use to develop an overall integrated EA environment with consistent methodologies and templates. It will also enable the ED users to capture and report on the OMB Reference Model data for ED systems and for different EA Domains.

* Note: The enclosed Meta-Model diagram is the current working draft, and will be refined as necessary based on upcoming discussions.

Meta-Model Concepts

EA Domains

An EA Meta-Model is typically organized into areas of related concepts called
EA Domains. The ED Meta-Model is comprised of four released OMB
Reference Model Domains:
- o   Performance Reference Model
- o   Business Reference Model
- o   Service Component Reference Model
- o   Technical Reference Model

and two Reference Model Domains that are To Be Developed (TBD):
- o   Data Reference Model
- o   Security Profile.

* Note: For the time being, the Data Reference Model and the Security Profile
domains have been color-coded grey, and marked as TBD in the EA Meta-Model
diagram. As OMB releases more information about these domains, they will
continue to be defined and integrated with the other ED EA domains.

Entities and Attributes

Within each domain are the information Entities and Attributes (additional details
about the Entities) for which EA data will be collected.

* Note: Some Entities are outside the Reference Model Domains. These are
either extensions to the OMB Reference Models (to capture missing OMB
concepts needed by ED) or placeholders for additional future ED EA Entities.
Attributes can also be extensions of OMB concepts or used to differentiate ED
data items from the data items that are unique to each agency.

Relationships

Relationships describe how different Entities can be modeled for visual
diagramming and reporting purposes. Being Entities themselves, Relationships
can also have Attributes. In addition, Relationships have descriptions on how the
Entities to which they are attached are related (e.g., Entity A can be related to
several instances of Entity B, but to only one instance of Entity C).

* Note: In this version of the Meta-Model, there are several temporary
relationships that will be used for ease of OMB Reference Model Reporting until
the Placeholder Types are further defined. These temporary relationships are
currently depicted as Dotted Lines in the EA Meta-Model.

Creation of a new Sandbox

The following steps can be used to create a new Sandbox on the user machine, which may be used for testing or backup purposes:

1. Launch System Architect

2. Go to **File, Open Encyclopedia**.

3. Select the Encyclopedia whose Sandbox is to be created (e.g., "FSA EA Metamodel.UDL").

![Open Project dialog box showing Recent tab with a list of encyclopedia file paths, with "FSA EA Metamodel.UDL" highlighted](image)

Open Project

New | Existing | Recent

ncyclopedias

:uments and Settings\Manish.Vij\My Documents\test new udl.UDL
uments and Settings\Manish.Vij\My Documents\test 06.UDL
:uments and Settings\Manish.Vij\My Documents\FSA EA Reference Model F'
uments and Settings\Manish.Vij\My Documents\FSA-EA-FEAF 4RMs FY05
uments and Settings\Manish.Vij\My Documents\uvw.UDL
uments and Settings\Manish.Vij\My Documents\test 05.UDL
:uments and Settings\Manish.Vij\My Documents\FSA EA Reference Model F'
:uments and Settings\Manish.Vij\My Documents\FSA EA Metamodel.UDL
uments and Settings\All Users\Application Data\Popkin\Samples_Encyclope
:uments and Settings\Manish.Vij\My Documents\test9.UDL
:uments and Settings\Manish.Vij\My Documents\FSA EA Reference Model.U
:uments and Settings\Manish.Vij\My Documents\Version 1 BRM.UDL
:uments and Settings\Manish.Vij\My Documents\FSA EA Reference Model 2'
uments and Settings\All Users\Application Data\Popkin\Tutorial.udl
uments and Settings\All Users\Application Data\Popkin\BPMN Sample.udl
uments and Settings\All Users\Application Data\Popkin\Magic Sample.udl
uments and Settings\All Users\Application Data\Popkin\Loan Application.ud

☐ Load this encyclopedia at startup   Open   Cancel

4. This will open the encyclopedia in Popkin, whose Sandbox needs to be created.

Creation of a New Sandbox (Continued)
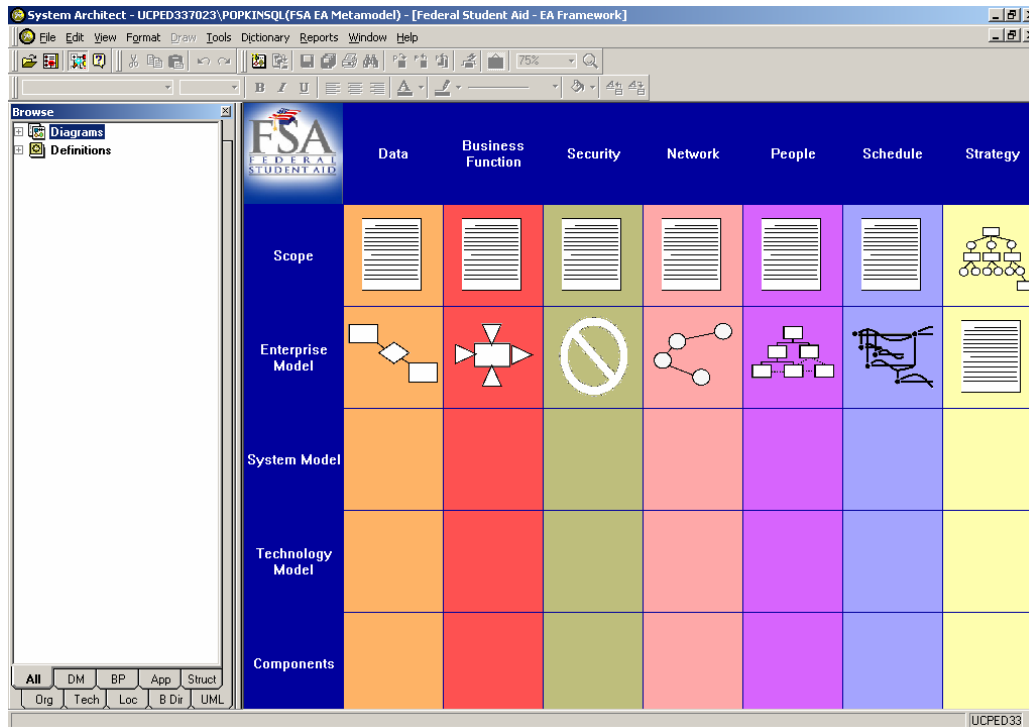
5. Now select Tools → Extract from the main menu
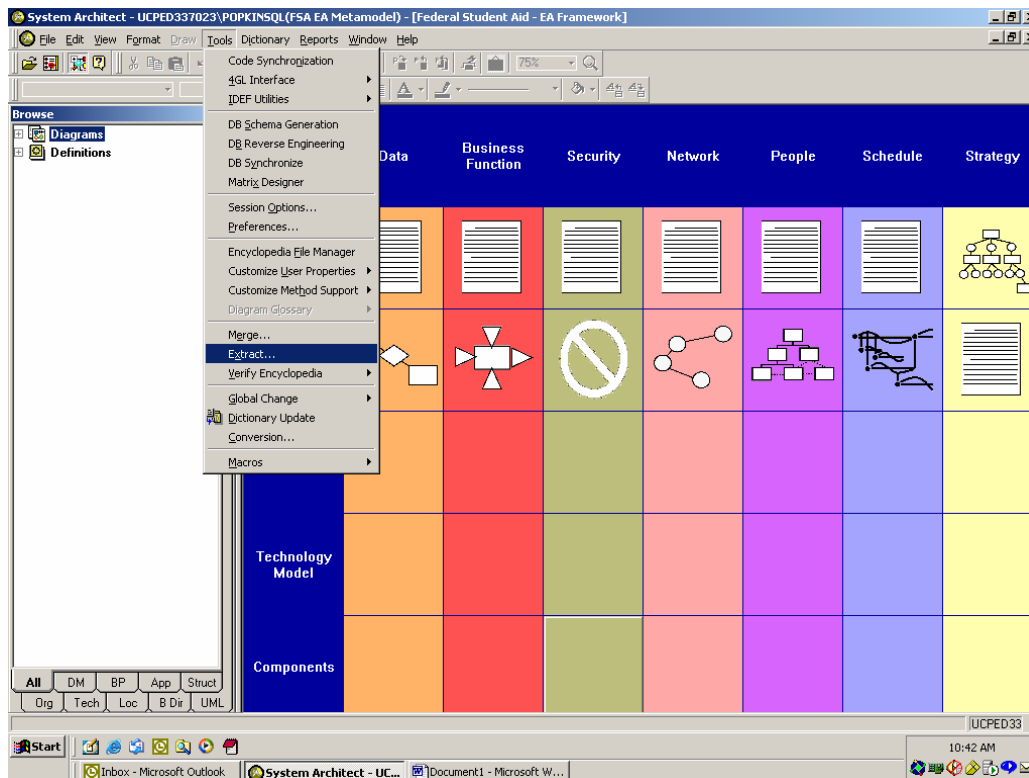
Creation of a new Sandbox (Continued)

6. The following dialog box should appear
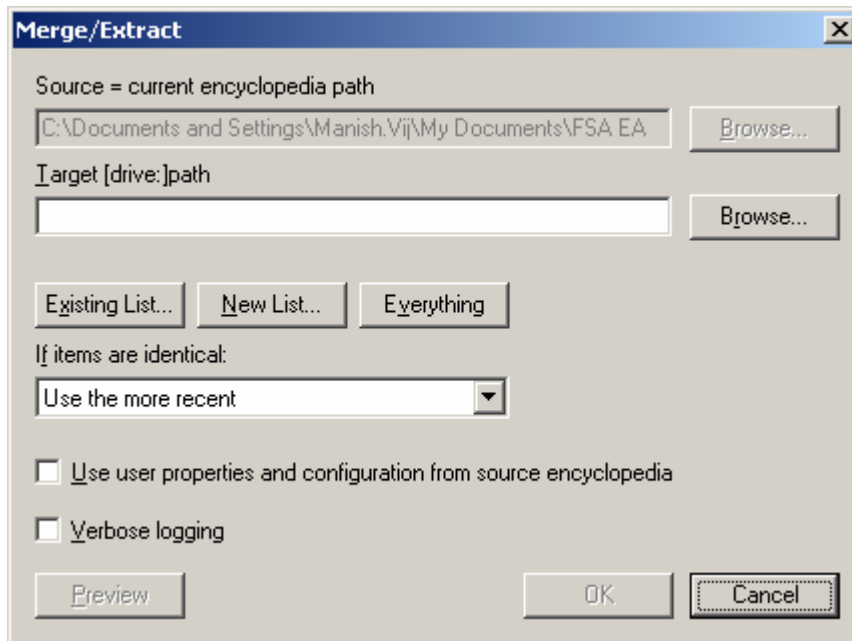
7. Click on **Browse** and select the "New" tab

Creation of a new Sandbox (Continued)
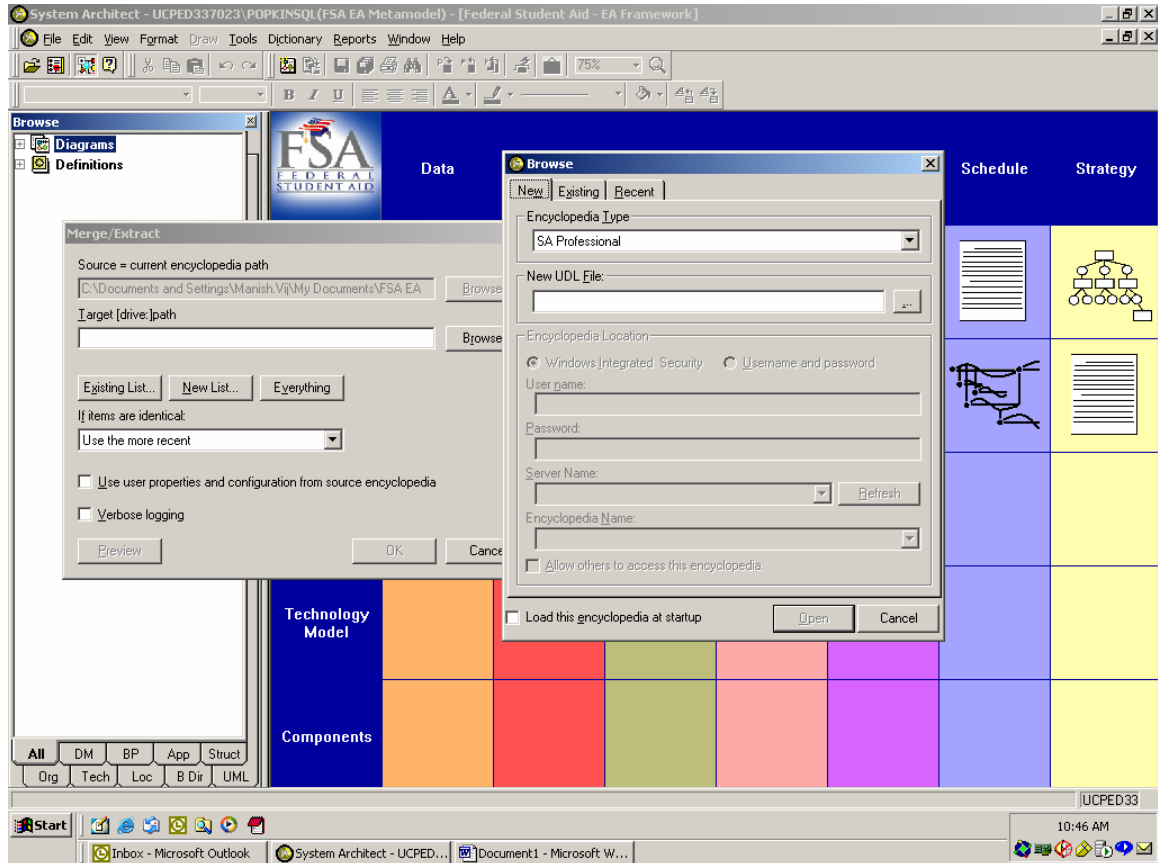
8. Click on the "…" Button next to the "New UDL File" field. The following dialog box will open.

Creation of a new Sandbox (Continued)
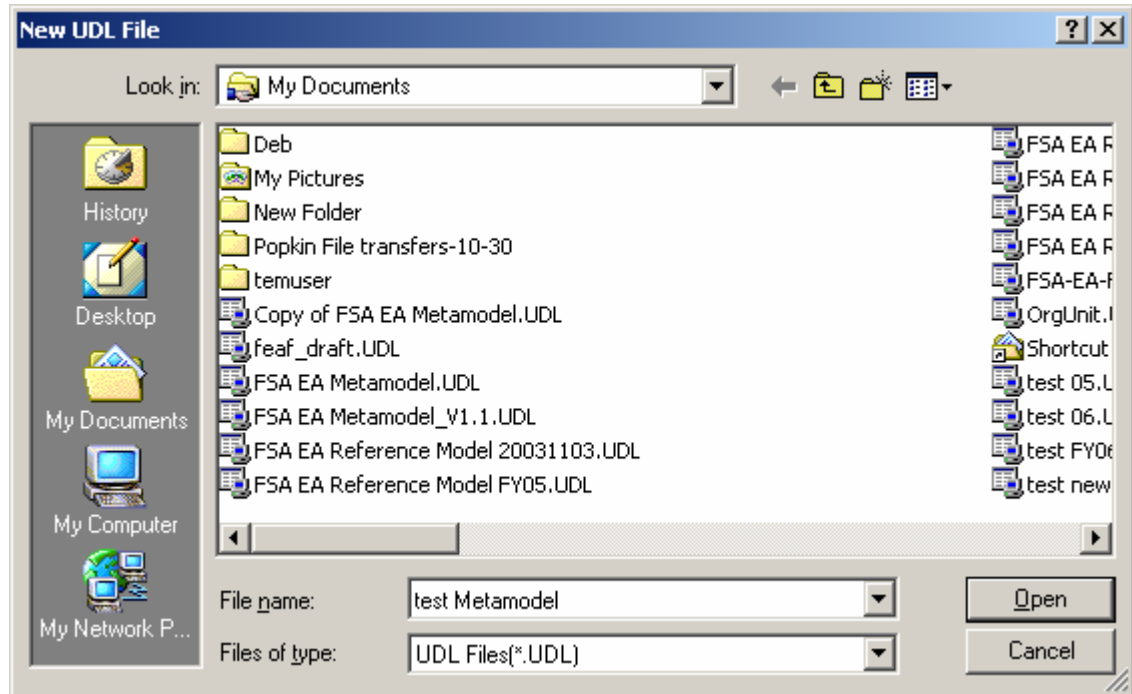
9. Enter the name of the Sandbox in the "File Name" field (e.g. "test Metamodel"), and click on "Open".

10. Select "UCPED337023\POPKINSQL" in the Server Name combo field, and enter "test Metamodel" in the Encyclopedia Name field.

Creation of a new Sandbox (Continued)
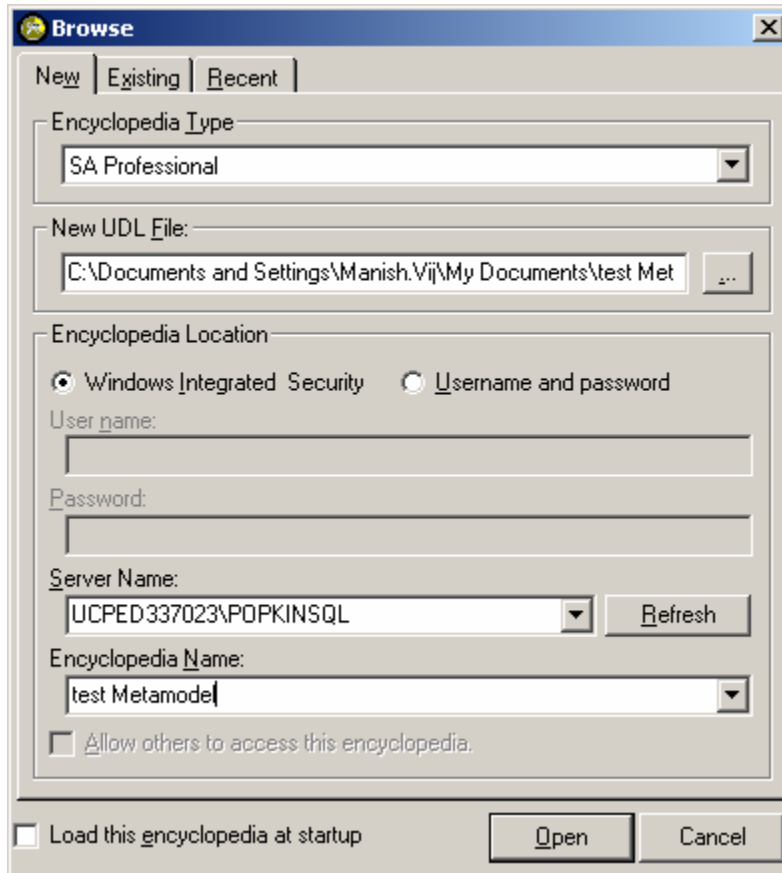
11. Now click on the Open Field. This will bring the user back to the Merge/Extract window, with the Target [drive:] path field populated.

Creation of a new Sandbox (Continued)
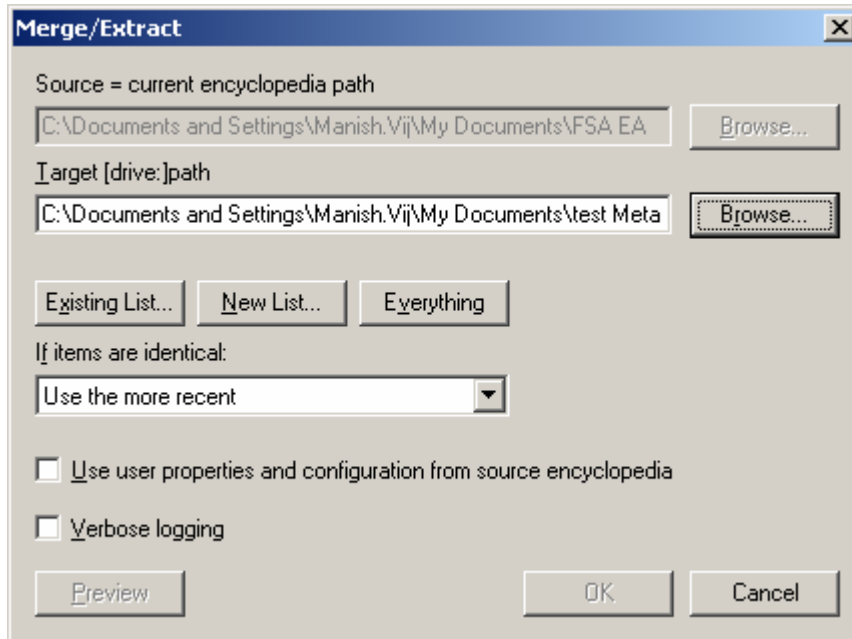
12. Now click on the "Everything" button and check the "Use user properties and configuration from source encyclopedia" check box.

13. Now click on **OK**
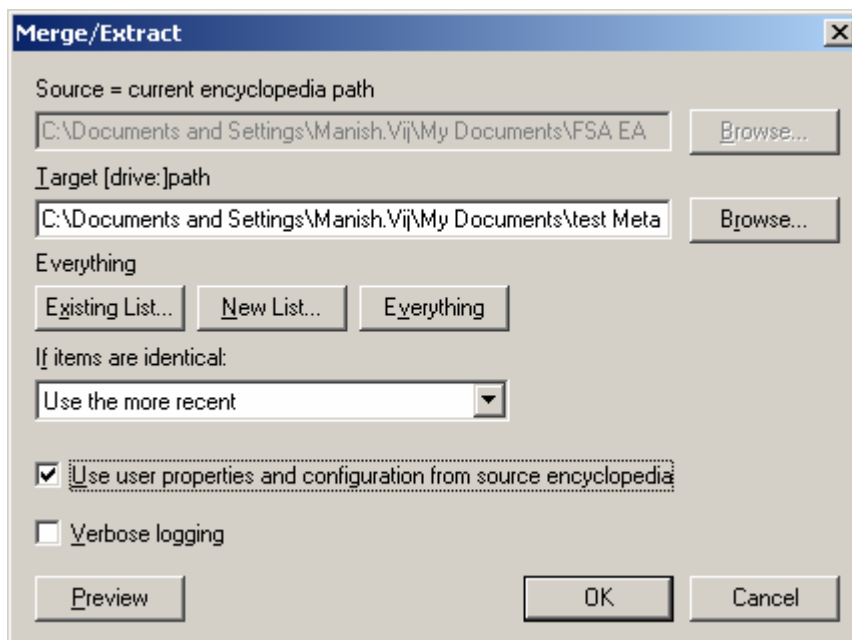
Creation of a new Sandbox (Continued)

14. The following dialog box will appear.

System Architect

⚠ Before continuing you should back up the target encyclopedia. Have you backed up the encyclopedia located at:

C:\Documents and Settings\Manish.Vij\My Documents\test Metamodel.UDL

[Yes]   [No]
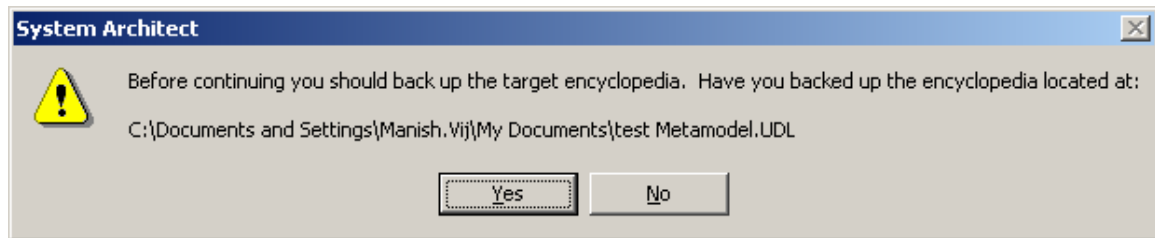
15. Since we are extracting into a Blank encyclopedia, click on the Yes button.

16. This will take a few moments while the extraction process is being completed.

17. After the extraction is complete, the following window will appear, which lists a summary of the Data that was added to the Sandbox.

Encyclopedia Extract to C:\Documents and Settings\Manish.Vij\My Documents\test ...

```
Encyclopedia Extract to C:\Documents and Settings\Manish.Vij
Submitted by 'UCPED33' on 3/30/2004 at 11:16:13 AM
Everything
==========================================


Total Diagrams
    Added: 1
    Replaced: 0
    Not replaced: 0

Total Data dictionary entries
    Added: 166
    Replaced: 0
    Not replaced: 0
```
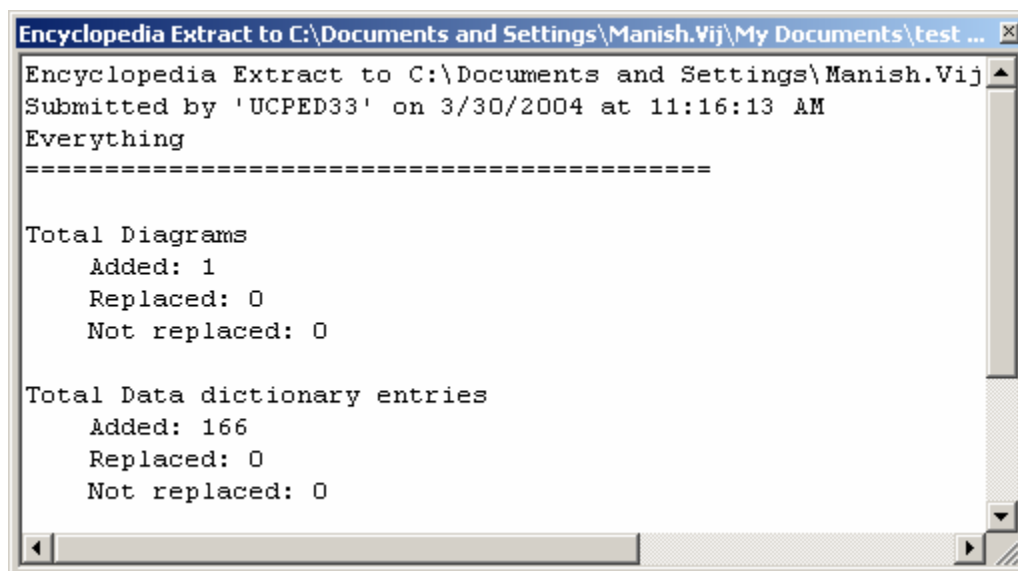
18. Close this window.

19. A Sandbox has now been successfully created for the user, which can be opened using File, Open Encyclopedia.

Lessons Learned

Enabling the Dept. of Ed Reports Option if it is not visible

Observation

When using the FY05 and the FY06 encyclopedias, it has been noticed on a few occasions that the "Dept. of Ed Reports" option from "Reports" in the main menu is not visible. This option should be available to the user under Reports so that the user may launch a PRM, BRM, SRM, or TRM report.

Resolution

If the above happens, close the encyclopedia after saving the changes. Now reopen the same encyclopedia by selecting **File, Open Encyclopedia** from the main menu. The user will observe that when he/she now selects Reports from the main menu, the "Dept. of Ed Reports" option is visible.

Enterprise Architecture Consolidation Strategy

Currently, various teams within FSA and the Department of Education are working on different efforts related to Enterprise Architecture modeling. As these different teams continue their efforts in terms of development of Architectural Artifacts, one of the key issues that need to be addressed is the layout of an Enterprise Architecture Consolidation Strategy.

Under the guidelines of this consolidation strategy, some of the areas that need to be addressed are as follows:

- **Consolidation of MetaModel**

  This includes the consolidation of Metamodels designs of the different teams working on the development of Enterprise Architecture artifacts. It is necessary to ensure that there is consistency of design approaches among these teams, which will be established through review processes and working sessions.

Lessons Learned (Continued)

- **Consolidation of USRPROPS.txt**

  Currently, each team is involved with the development of its own USRPROPS.txt for the definition of the custom variables being used by that team, which includes the definition of custom Diagram Types, Symbols, and Definitions. Under the overall consolidation effort, it would be necessary to merge the different USRPROPS.txt files into one USRPROPS.txt for the consolidated Repository. The different teams will have to work together to bring about this consolidation through agreement on naming conventions, definition approaches etc. Also, future changes to the consolidated USRPROPS.txt would need to be managed through a formal review process, as laid down in the governance process.

- **Consolidation of Repository Data**

  Once the consolidation of the MetaModel and the USRPROPS.txt is complete, the different teams within FSA and the Department of Education can work towards the consolidation of data in their individual repositories. This would involve the creation of a brand new encyclopedia, and the use of the Popkin Merge functionality to extract data from these separate encyclopedias into the super-set master encyclopedia.

- **Consolidation of Governance Procedures**

  The Governance Procedures established by the different teams for managing the System Architect Repository will have to be consolidated into a single Governance Guideline document for the FSA and Department of Education Enterprise Architecture teams. This Governance document will provide the necessary framework to manage the working of the consolidated ED Enterprise Architecture Repository.

Broken Linkages as a result of changing USRPROPS.txt

Observation

When updating the definitions and properties of the Custom Variables in the USRPROPS.txt, the linkages between the different custom symbols (using these variables) may get broken. This may affect data-entry and reporting on the diagrams which are impacted by these changes.

Lessons Learned (Continued)

Resolution

In order to ensure that the linkages are not impacted as a result of changing the USRPROPS.txt, the user should check that the linkages between the different symbols still exist. In case any linkages were discovered to be missing or broken, during Reporting or QA, they should be fixed. Also, it is a good idea to make backups of the encyclopedia before making such changes to the USRPROPS.txt.

Defect Resolution when upgrading from Popkin Version 9.1.13 to Version 9.1.23

Observation

When we upgraded Popkin from Version 9.1.13 to Version 9.1.23, we observed that we were having problems creating new encyclopedia. An attempt to do so resulted in error messages.

Resolution

It was discovered that this error was a result of the DODAF USRPROPS.txt, in the System Architect directory, which is shipped with the upgraded version. The configurations in this file were creating conflicts with our custom USRPROPS.txt, thereby resulting in these error messages.

In order to fix this issue, we made a backup of the default USRPROPS.txt (the DODAF version), and created a new blank USRPROPS.txt in the System Architect directory. This blank master USRPROPS.txt doesn't create any conflict with our customized encyclopedia USRPROPS.txt, and hence our problem was successfully resolved.

QA Results

FY05 BRM Report

- No Discrepancies to Report

FY05 PRM Report

#	Application	Discrepancy	Reason for Discrepancy
1	COD	In the "Response Time" Measurement Indicator, "T" is upper case as opposed to lower case.	This was done for consistency purposes in the tool
2	COD	In the "Payments" Measurement Indicator, we corrected the "- " typo before the field value	This was done to correct a typo
3	DMCS	In the "Response Time" Measurement Indicator, "T" is upper case as opposed to lower case.	This was done for consistency purposes in the tool
4	EAI-ITA	In the "Quality (Process and Activity)" Measurement Category field, "(Process and Activity)" was added after "Quality"	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference model data, with "Quality" as a Measurement Category
5	EAI-ITA	In the "IT Infrastructure Maintenance Time - Time EAI/ITA infrastructure is available to users divided by total time period (as percentage)" Measurement Category field, "(as percentage)" was added at the end of the field	This was done for consistency purposes in the tool
6	EAI-ITA	In the "Reliability – The unplanned time that EAI/ITA is not available to users, due to architecture failures, divided by total time period (converted to percentage)" Measurement Category field, "(converted to percentage)"	This was done for consistency purposes in the tool

#	Application	Discrepancy	Reason for Discrepancy
		was added at the end of the field	
7	FMS	In the "response time" Measurement Indicator, "r" and "t" are lower case as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference model data, with "Response Time" as a Measurement Indicator
8	FMS	In the "Financial Management - Reduce funds control failures by implementing Federal Administrator & developing status of funds report." Measurement Category field, "." was added at the end of the field	This was done for consistency purposes in the tool
9	FMS	In the "Accounting - Support financial statements preparation to ensure quarterly updates within timeframe 100% of the time." Measurement Category field, "." was added at the end of the field	This was done for consistency purposes in the tool
10	FMS	In the "Customer Impact or Burden - % of Help Desk calls that do not require development are resolved within one business day" Measurement Category field, no "." was added at the end of the field	This was done for consistency purposes in the tool
11	IPM	In the "Data Reliability and Quality - Improvement of data quality and accuracy by improving entity relationship mapping edits/processes and training staff" Measurement Category field, no "." Was added at the end of the field	This was done for consistency purposes in the tool

FY05 SRM Report

- No Discrepancies to Report

FY05 TRM Report

#	Application	Discrepancy	Reason for Discrepancy
1	COD	In the Service Specification "Platform independent", the "i" in "independent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Independent" as a Service Specification
2	COD	In the Service Specification "Platform dependent", the "d" in "dependent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Dependent" as a Service Specification
3	NSLDS	In the Service Specification "Platform independent", the "i" in "independent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Independent" as a Service Specification
4	SAIG	In the Service Specification "Platform independent", the "i" in "independent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Independent" as a Service Specification
5	SAIG	In the Service Specification "Platform dependent", the "d" in "dependent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Dependent" as a Service Specification
6	IPM	In the Service Specification "Platform independent", the "i" in "independent" is spelled in lower case, as opposed to upper case	This was done to bypass a Tool Limitation, since there are 2 different hierarchies in the reference models which have "Platform Independent" as a Service Specification

Nuances in Popkin Definitions

Visible Differences

OMI Definition	Comments
% of Products/Services that meet pre-determined qual. Stds or customer specs	Has different GMI
% of Products/Services that meet pre-determined qual. Stds or customer specs.	Has different GMI
Availability	Has different GMI
availability	Has different GMI
Number of NSLDS findings in Financial Statement Audit	Has different GMI
Number of NSLDS findings in Financial Statement Audit.	Has different GMI
Response Time	Has different GMI
Response time	Has different GMI
Suppt fin. statements prep to ensure qtrly updates within time 100% of time	Has different GMI
Suppt financial statements prep to ensure qtrly updates within time 100% of time	Has different GMI
GMI Definition	Comments
Availability	Has different MC and MA
availability	Has different MC and MA
Higher Education	Has different MC and MA
higher education	Has different MC and MA
IT Infrastructure Maintenance	Has different MC and MA
IT Infrastructure Maintenance Time	Has different MC and MA
Overall Cost	Has different MC and MA
Overall Costs	Has different MC and MA
Response Time	Has different MC and MA
Response time	Has different MC and MA
response time	Has different MC and MA

Other Differences

TRM Service Specification Definition	Comments
COBOL	Not a new service specification
cobol	New service specification
extranet	New Service Specification with "*Description 1"*
extranet	New Service Specification with "*Description 2"*
internet	New Service Specification with "*Description 1"*
Internet	New Service Specification with "*Description 2"*
intranet	New Service Specification with "*Description 1"*
Intranet	New Service Specification with "*Description 2"*
J2EE	New Service Specification with "*Description 1"*
J2EE.	New Service Specification with "*Description 2"*
Java 2 Platform Enterprise Edition (J2EE)	Not a new service specification
Mainframe	Not a new service specification
mainframe	New service specification
Peer to Peer	New Service Specification with "*Description 1"*
peer to peer	New Service Specification with "*Description 2"*
Peer to Peer (P2P)	Not a new service specification
peer-to-peer	New Service Specification with "*Description 3"*

References

- **Popkin User Guide** - The User Guide provides basic information on using System Architect.
  http://www.popkin.com/customers/customer_service_center/downloads/manuals/UserGuide.pdf

- **USRPROPS Extensibility Guide** - The USRPROPS Extensibility Guide provides detailed information on using the SAPROPS/USRPROPS language to tailor the MetaModel of System Architect Encyclopedias.
  http://www.popkin.com/customers/customer_service_center/downloads/manuals/Extensibility_usrprops.pdf

- **Popkin Conversion Guide** - The Conversion Guide provides details on how to convert encyclopedias created with previous versions of System Architect to the latest version. It also provides details on making necessary adjustments to ancillary products, such as VBA and Word Macros associated with System Architect.
  http://www.popkin.com/customers/customer_service_center/downloads/manuals/conversion.pdf

- **VBA Extensibility Guide** - The VBA Extensibility Guide provides detailed information on using System Architect's object model to build VBA macros in the tool.
  http://www.popkin.com/customers/customer_service_center/downloads/manuals/Extensibility_VBA.pdf

- **Popkin Process** - The Popkin Process Guide provides the user with a way to model Enterprise Architectures.
  http://www.popkin.com/customers/customer_service_center/downloads/manuals/Popkin_Process.pdf

- **Popkin Training Manuals** – The "Business User" and "Power User" binders of the Popkin training material (distributed during the 5-day training session) provide a good overview of a range of topics that would be of interest to a Business User or a Power User within FSA for Popkin related tasks.

Glossary

Metamodel   A Metamodel is the design that determines what your database is going to look like. It is developed from the design of your logical model or physical model. The System Architect meta-model determines what every System Architect repository looks like, and that includes the relationships between objects and all the customizations added by a user.

VBA Macros   Visual Basic for Applications (VBA) Macros enables users to control the System Architect environment programmatically and enables System Architect to work with other applications using OLE Automation. Microsoft VBA and its development environment is installed with System Architect. The programming environment, debugging environment, and language is the same VBA found throughout the industry, including Microsoft Office products.

USRPROPS.TXT   The User Properties (USRPROPS.TXT) file is used to modify and extend the metamodel of an encyclopedia. The USRPROPS.TXT is modified based on the customizations needs for a particular encyclopedia using Tools → Customize User Properties.